Drinking Water Surveillance Program

THAMESVILLE WATER SUPPLY SYSTEM

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THAMESVILLE
WATER SUPPLY SYSTEM

DRINKING WATER SURVEILLANCE PROGRAM

ANNUAL REPORT 1989

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EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM

THAMESVILLE WATER SUPPLY
1989 ANNUAL REPORT

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. In 1989, 65 plants are being monitored.

The Thamesville Water Supply uses a groundwater source. The raw water is pumped through a Manganese Green Sand Filter for iron and manganese removal. The only additional treatment process applied is chlorination. This supply has a rated capacity of 0.36 x 1000 m^3/day and serves a population of approximately 900.

Samples of the raw and treated water were taken on a monthly basis. As well, a monthly sample was collected in the distribution system. The Thamesville Water Supply was sampled for the presence of approximately 180 parameters. Parameters were divided into the following groups: Bacteriological, Inorganic and Physical (Laboratory Chemistry, Field Chemistry and Metals) and Organic (Chloroaromatics, Chlorophenols, Pesticides and PCB, Phenolics, Polyaromatic Hydrocarbons, Specific Pesticides and Volatiles). Chlorophenols and Specific Pesticides were analyzed in June and November only.

A summary of results is shown in Table 1.

Inorganic and Physical parameters were below any applicable health related ODWOs.

Samples were analyzed for the presence of approximately 110 Organics. Levels did not exceed health related guidelines.

During 1989, the DWSP sampling results indicated that the Thamesville Water Supply System produced good quality water.

TABLE 1

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY

SUMMARY TABLE BY SCAN

	SCAN	RAW TESTS	RAW POSITIVE	RAW %POSITIVE	TREATED TESTS	TREATED POSITIVE	TREATED %POSITIVE	SITE 1 TESTS	SITE 1 POSITIVE	SITE 1 %POSITIVE
	BACTERIOLOGICAL	33	1	3	36	3	8	33	5	15
	CHEMISTRY (FLD)	24	24	100	60	59	98	95	68	71
	CHEMISTRY (LAB)	252	213	84	252	184	73	443	383	86
	METALS	288	134	46	288	126	43	564	311	55
	CHLOROAROMATICS	154	0	0	154	0	0	154	0	0
	CHLOROPHENOLS	12	0	0	12	0	0	.	.	.
	PAH	178	0	0	195	0	0	.	.	.
	PESTICIDES & PCB	387	0	0	387	0	0	322	0	0
	PHENOLICS	12	6	50	12	7	58	.	.	.
	SPECIFIC PESTICIDES	65	0	0	65	0	0	11	0	0
	VOLATILES	348	0	0	348	48	13	319	44	13
TOTAL		1753	378		1809	427		1941	811	

NO KNOWN HEALTH-RELATED GUIDELINES WERE EXCEEDED

A POSITIVE VALUE DENOTES THAT THE RESULT IS GREATEP THAN THE STATISTICAL LIMIT OF DETECTION AND IS QUANTIFIABLE
A '.' INDICATES THAT NO SAMPLE WAS TAKEN

DRINKING WATER SURVEILLANCE PROGRAM

THAMESVILLE WELL SUPPLY
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INTRODUCTION

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. In 1989, 65 plants were being monitored.

The DWSP was initiated in Thamesville in February of 1988. An Annual report was published for 1988 (ISSN 0843-8374).

This report contains information and results for 1989.

PLANT DESCRIPTION

The Thamesville Water Supply is a groundwater source. The raw water is pumped from the well through a Manganese Green Sand Filter, for iron and manganese removal, into a water tower. The water is chlorinated after the filter. The Thamesville Water Supply has a rated capacity of 0.36 x 1000 m^3/day and flows on day of sampling ranging from 0.2 x 1000 m^3/day to 0.4 x 1000 m^3/day. A population of approximately 900 is served.

The location is shown in Figure 1. General information is presented in Table 2.

SAMPLE LOCATIONS

Water samples were obtained from three DWSP approved locations;

i) Raw - The water originated from the discharge line of the well pump prior to chemical addition and was sampled through a stainless steel line. The sample tap is located after the pump.

ii) Treated - The water originated from the discharge line and was sampled through a stainless steel line. The sample tap is located after the filters.

iii) Site 1 - This site is located approximately 1 kilometre from the plant. Water was sampled through steel piping from the basement laundry tap.

SAMPLING AND ANALYSES

Sample lines in the plant were flushed prior to sampling to ensure that the water obtained was indicative of its origin and not residual water standing in the sample line.

Stringent DWSP sampling protocols were followed to ensure that all samples were taken in the same manner.

FIGURE 1

DRINKING WATER SURVEILLANCE PROGRAM

SITE LOCATION MAP

THAMESVILLE WELL SUPPLY

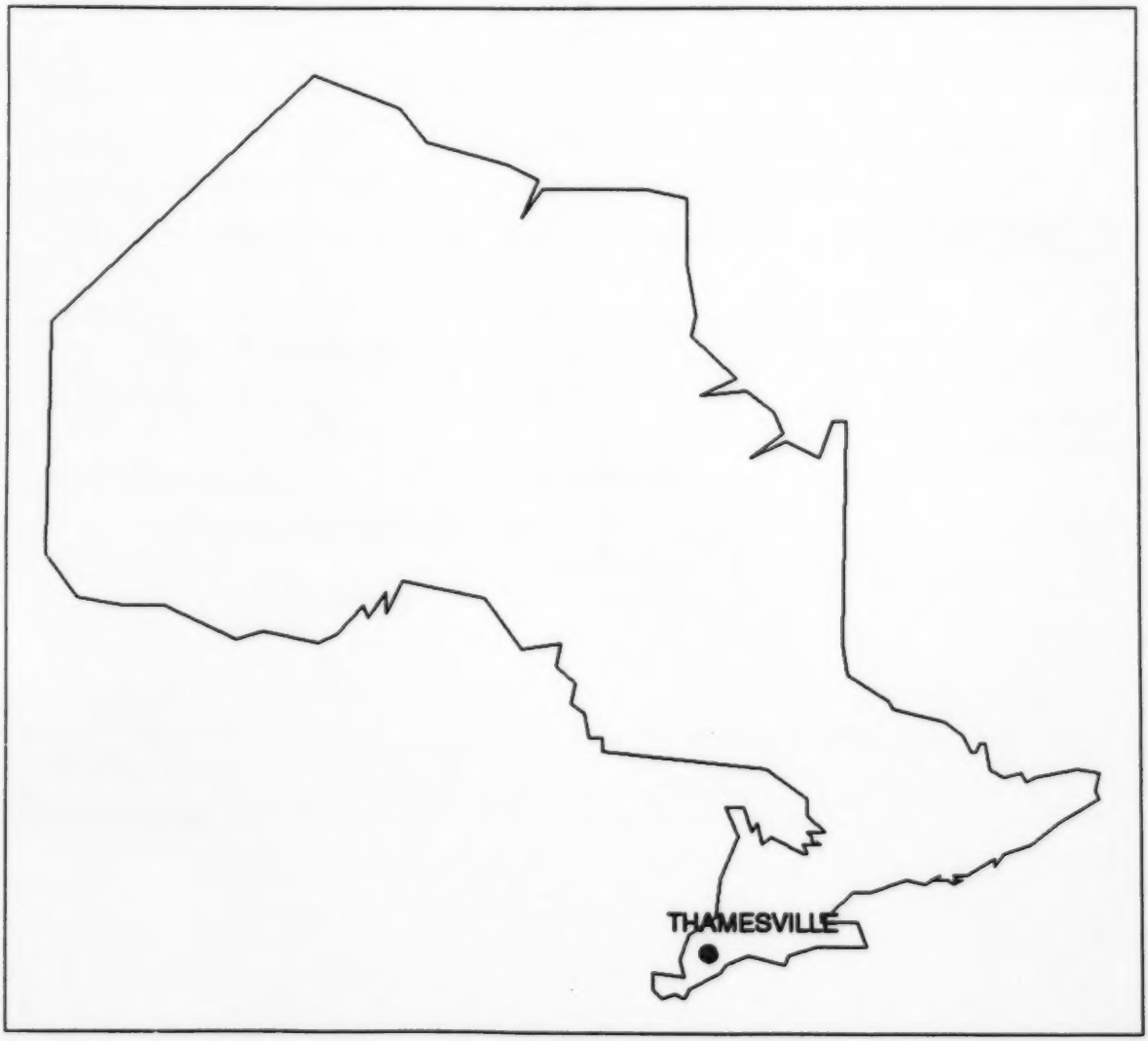

FIGURE 2

THAMESVILLE WATER SUPPLY SYSTEM

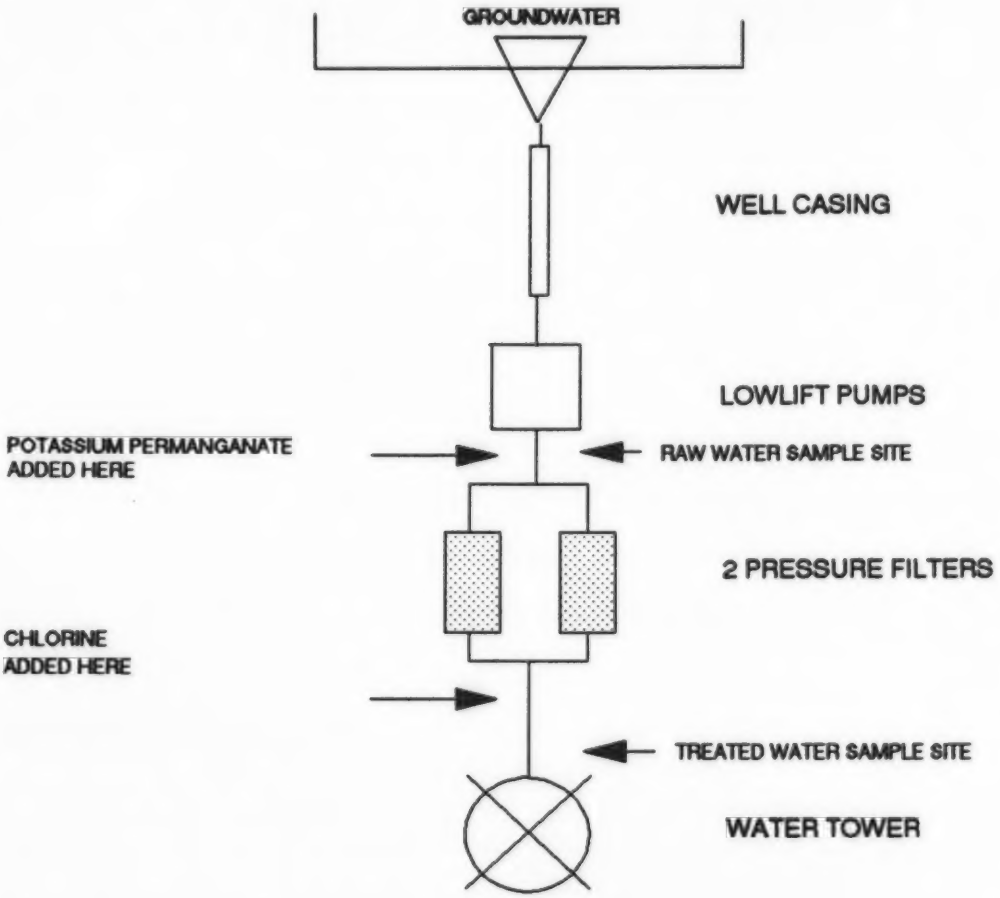

TABLE 2

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT

GENERAL INFORMATION

THAMESVILLE WATER SUPPLY

LOCATION:	THAMESVILLE, ONTARIO PO BOX 220, HWY 21 N0P 2K0 (519-692-5377)
SOURCE:	RAW WATER SOURCE - GROUND WATER
RATED CAPACITY:	0.364 (1000 M3/DAY)
OPERATION:	MINISTRY
PLANT SUPERINTENDENT:	J. WILSON
MINISTRY REGION:	SOUTHWEST
MOE CONTACT:	J. DRUMMOND

MUNICIPALITY SERVED	POPULATION
THAMESVILLE	900

At distribution system locations two types of samples are obtained: a standing and a free flow. The standing sample consisted of water that had been in the household plumbing and service connection for a minimum of six hours. These samples are used to make an assessment of the amount by which the levels of inorganic compounds and metals may be changed on standing due to leaching from (or deposition on) the plumbing system. The only analysis carried out on the standing samples, therefore, are General Chemistry and Metals. The free flow sample represented water from the distribution main that had been flowing at the sample tap for five minutes before being sampled.

Attempts were made to capture the same block of water at each sampling point by taking the retention time into consideration. The retention time was calculated by dividing the volume of water between the two sampling points by the sample day flow. For example, if it was determined that the retention time within the plant was five hours then there would be a five hour interval between the raw and treated water sampling. Similarly, if it was estimated that it took approximately one day for the water to travel from the plant to the distribution system site, this site would be sampled one day after the treated water at the plant.

The Thamesville Water Supply System locations were sampled for the presence of approximately 180 parameters on a monthly basis in 1989. The Specific Pesticides and Chlorophenols scans were sampled

in June and November only. Polyaromatic Hydrocarbons and Phenols are only analyzed in the raw and treated water. As of August, the triazine pesticides were only analyzed in the raw and treated water.

RESULTS

Field measurements are recorded on the day of sampling and entered onto the DWSP data base as submitted by plant personnel.

Table 3 contains information on the sample day retention time, flow rate and treatment chemicals used and their associated dosages.

Table 4 is a summary break-down of the number of water samples analyzed by parameter and by water type. The number of times that a positive or trace result was detected is also reported.

Positive denotes that the result is greater than the statistical limit of detection established by the Ministry of the Environment (MOE) laboratory staff and is quantifiable. Trace (<T) denotes that the level measured is greater than the lowest value detectable by the method but lies so close to the detection limit that it cannot be confidently quantified.

Table 5 presents the results for parameters detected on at least one occasion.

Table 6 lists all parameters analyzed in DWSP.

Associated guidelines and detection limits are also supplied on tables 5 and 6. Parameters are listed alphabetically within each scan.

DISCUSSION

General

Water quality is judged by comparison with the Ontario Drinking Water Objectives (ODWOs) as defined in the 1984 publication (ISBN 0-7743-8985-0). The Province of Ontario has health related and aesthetic objectives for 49 parameters. These are currently under review. When an ODWO is not available, guidelines/limits from other agencies are consulted. The Parameters Listing System (PALIS), recently published (ISBN 0-7729-4461-X) by the MOE, catalogues and keeps current over 1750 guidelines for 650 parameters from agencies throughout the world.

Many of the compounds detected are naturally occurring or are treatment by-products.

The DWSP does not analyze for Taste and Odour or other biological water quality parameters, and can therefore not assess these aspects of the water supply.

As stated under Results, traces do not indicate quantifiable results as defined by established MOE laboratory analytical reporting protocols. While they can be useful in trend analysis or confirmation of the presence of a specific contaminant that is repeatedly detected at these levels, the occasional finding of a trace level of a contaminant is not considered to be significant. **DISCUSSION OF GUIDELINES AND LIMITS THEREFORE, IS ONLY CONDUCTED ON POSITIVE RESULTS.**

Bacteriology

Results for the Bacteriology scan indicate that there were three positive results in the treated water and five in the Site 1 water. In all cases the positive parameters were Standard Plate Count. Standard Plate Count is a test used to supplement routine analysis for Coliform bacteria. The limit for Standard Plate Count (at 35°C after 48 hours) in the ODWOs is 500 organisms per mL (based on a geometric mean of 5 or more samples). High Standard Plate Counts were present in the July treated and Site 1 water samples and in the August Site 1 water. While no indicators of unsafe water were detected at this time, the high Standard Plate Count at Site 1 may be indicative of a deterioration in conditions in the distribution system. Total Chlorine Residuals were zero for the Site 1 water samples during those months. No samples contained bacteriological results over any applicable health related ODWOs.

Guidelines for bacteriological sampling and testing of a supply are developed to maintain a proper supervision of its bacteriological quality; the routine monitoring program usually requires the taking of multiple samples in a given system. Full interpretation of bacteriological quality cannot be made on the basis of single samples. Routine bacteriological monitoring, as outlined in the ODWOs, is carried out by the operating authority.

Inorganic and Physical

Laboratory and Field Chemistry

The results for the Laboratory Chemistry and Field Chemistry scans were below any applicable health related ODWOs.

Turbidity in water is caused by the presence of suspended matter such as clay, silt, colloidal particles, plankton and other microscopic organisms. The most important potential health effect of Turbidity is its interference with disinfection in the treatment plant and the maintenance of a chlorine residual. The ODWO of 1 Formazin Turbidity Unit (FTU), which is only applicable to treated water leaving the plant, was exceeded in February (1.14 FTU), June (1.07 FTU) and August (2.5 FTU). The District Officer was notified on all occasions. Field turbidity results, generally a more accurate test, were not available.

The Hardness levels for the Thamesville water ranged from 264-317

mg/L. The ODWOs indicate that a hardness level of between 80 and 100 mg/L as calcium carbonate for domestic waters, provides an acceptable balance between corrosion and encrustation. Water supplies with a hardness greater than 200 mg/L are considered poor and would possess a tendency to form scale deposits and result in excessive soap consumption.

The European Economic Community (EEC) aesthetic guideline level for Calcium of 100 mg/L was exceeded in one treated water sample and one free flow water. Calcium and magnesium are the main parameters that contribute to water hardness.

The European Economic Community (EEC) aesthetic guideline level for Conductivity of 400 UMHO/cm was exceeded in all of the water samples, and is a result of the high hardness levels.

Colour values exceeded the aesthetic ODWO of 5 True Colour Units (TCU) ten times in the Site 1 free flow water. Colour in drinking water may be due to the presence of natural or synthetic organic substances as well as certain metallic ions. High levels of iron were also present in some of the samples showing high colour.

It is desirable that the Temperature of drinking water be less than 15°C; the palatability of water is enhanced by its coolness. A temperature below 15°C will tend to reduce the growth of nuisance organisms and hence minimize associated taste, colour, odour and

corrosion problems. The temperature of the delivered water may increase in the distribution system due to the warming effect of the soil in late summer and fall and/or as a result of higher temperatures in the source water. The desired ODWO was exceeded four times in the free flow distributed water during the summer months.

The Langelier Index is used extensively in estimating the corrosion potential of water. An increasingly negative index indicates the increasing possibility of corrosion. It is considered sound engineering practice to maintain a slightly positive Langelier Index. The Langelier Index for Thamesville is positive.

Metals

The results reported for the Metals scan were all below applicable health related ODWOs.

The aesthetic ODWO for Iron of 300 ug/L was exceeded ten times in the Site 1 water with values ranging as high as 1500 ug/L, even though the treated water was uniformly well below the objective level.

The aesthetic ODWO for Manganese of 50 ug/L was exceeded in the September treated water sample at 58 ug/L.

The raw water at Thamesville contains iron and manganese levels

well in excess of objective levels. Excessive levels of Iron and Manganese in drinking water are objectionable because they cause staining of laundry and may produce undesirable tastes in beverages. Excessive Iron can also promote the growth of iron bacteria in water mains and service pipes and Manganese may encourage the build up of slimy coatings in piping which can slough off as black precipitates. The results indicate that the manganese green sand filter was successful in substantially reducing iron and manganese; in the case of iron, however, levels in the distribution system were greater than those in treated water at the plant. More detailed studies carried out by the Drinking Water Section's Technological Assessment Group on the Thamesville water have shown that organic fouling occurs in the distribution system. This results in biological growth in the pipeline and oxidation of the iron and manganese in the pipe.

Elevated levels of Aluminum, Cadmium and Nickel and high levels of Copper, Iron, Lead, Manganese and Zinc were detected in the standing water as compared to the free flow water. This indicates that these metals were leached from the household plumbing or distribution mains as the water stood overnight. Levels of copper, iron and lead were also elevated in the free flow samples compared with the treated water, although none were above guideline levels. The distribution main to this site was made of cast iron. The main was replaced in the fall of 1989. The iron levels at Site 1 were considerably lower in November and December. Although the

Langelier Index indicates minimal potential for corrosion it appeared to be substantial at this one location.

Organic Parameters

Chloroaromatics

The results of the Chloroaromatics scan showed that no chloroaromatics were detected.

Chlorophenols

The results of the Chlorophenols scan showed that no chlorophenols were detected.

Pesticides and PCB (Polychlorinated Biphenyls)

The results of the Pesticides and PCB scan showed that no PCBs were detected and that one pesticide was detected:

Alpha-BHC

There are several isomers of BHC (benzene hexachloride); gamma BHC is the active ingredient of the pesticide Lindane, while alpha BHC is the isomer most predominantly found in surface waters of the Great Lakes basin as indicated in results from other water supplies on DWSP.

Alpha-BHC was detected at a trace level, once in the raw water.

Specific Pesticides

Results of the Specific Pesticides scan showed that no Specific Pesticides were detected.

Phenolics

The maximum desirable concentration of phenolic substances in drinking water is 2.0 ug/L. This limit has been set primarily to prevent the occurrence of undesirable tastes and odours, particularly in chlorinated water. Phenolics were detected six times in the raw water, ranging from 1.0 ug/L to 10.2 ug/L, and seven times in the treated water, ranging from 0.8 ug/L to 2.6 ug/L. Phenolic compounds are present in the aquatic environment as a result of natural and/or industrial processes.

Polynuclear Aromatic Hydrocarbons (PAHs)

The results of the PAH scan showed that no PAHs were detected.

Volatiles

The results of the Volatiles scan showed that six parameters, other than Trihalomethanes(THMs), were detected:

Toluene

Ethylbenzene

Ortho-Xylene

Styrene

1,1,1-Trichloroethane

Tetrachloroethylene

The detection of benzene, ethylbenzene, toluene and the xylenes at low, trace levels is a laboratory artifact derived from the analytical methodology.

The detected trace levels of Styrene are also considered to be laboratory artifacts resulting from the polystyrene shipping containers. The sporadic background levels from this source are in the order of 0.05 µg/L.

1,1,1-Trichloroethane was detected at trace levels, once in the raw water and once in the treated water.

Tetrachloroethylene (T-Chloroethylene) was detected at trace levels, twice in the treated water.

THMs are acknowledged to be produced during the water treatment process and will always occur in chlorinated surface waters. THMs are comprised of Chloroform, Chlorodibromomethane and Dichlorobromomethane. Bromoform occurs occasionally. Results are reported for the individual compounds as well as for total THMs.

Chloroform, Chlorodibromomethane and Dichlorobromomethane were detected in all treated water samples. Bromoform was detected once at a trace level.

All Total THM occurrences, ranging from 51 ug/L to 118 ug/L, were well below the ODWO of 350 ug/L.

CONCLUSIONS

The Thamesville Water Supply for the sample year of 1989 was of good quality at the plant. The process of using the Manganese Green Sand Filter for iron and manganese removal appears to be initially effective; however, levels of iron and manganese increased during storage and distribution, perhaps due to the fact that the distribution main is cast iron and organic fouling occurs in the distribution system. The result is that the aesthetic objective levels for iron and manganese were exceeded at the consumers tap and usually were associated with a complete loss of chlorine residual. The cast iron main was replaced in the fall, and as a result, we should see reduced levels of iron and manganese. The water delivered to the consumer is very hard and considered to be of poor quality from this aspect.

No health related guidelines, for organic or inorganic parameters, were exceeded during 1989.

RECOMMENDATIONS

One recommendation can be made:

1. The use of a combined chlorine residual may increase the levels in the distribution system and reduce the problems.

TABLE 3

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY SAMPLE DAY CONDITIONS FOR 1989

	SAMPLE DAY CONDITIONS		TREATMENT CHEMICAL DOSAGES (MG/L)	
			FE,MN REMOVAL	POST-CHLORINATION
DATE	RETENTION TIME(HRS)	FLOW (1000M3)	POTASSIUM PERMANGANATE	CHLORINE
JAN 24	.2	.3	2.40	3.90
FEB 15	.2	.3	2.40	3.90
MAR 21	.2	.3	2.40	3.90
APR 18	.2	.2	2.40	3.90
MAY 16	.2	.3	2.40	3.90
JUN 20	.2	.4	2.40	3.90
JUL 18	.2	.4	2.40	3.90
AUG 21	.2	.4	2.40	4.20
SEP 19	.2	.3	2.40	3.90
OCT 17	.2	.4	2.40	3.90
NOV 15	.2	.4	2.40	3.40
DEC 19	.2	.3	2.40	3.90

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
BACTERIOLOGICAL	FECAL COLIFORM MF	11	0	0	.	.	.	.	.	.
	STANDRD PLATE CNT MF	.	.	.	12	3	0	11	5	0
	TOTAL COLIFORM MF	11	0	0	12	0	0	11	0	0
	T COLIFORM BCKGRD MF	11	1	0	12	0	0	11	0	0
*TOTAL SCAN BACTERIOLOGICAL		33	1	0	36	3	0	33	5	0
*TOTAL GROUP BACTERIOLOGICAL		33	1	0	36	3	0	33	5	0
CHEMISTRY (FLD)	FLD CHLORINE (COMB)	.	.	.	12	11	0	15	6	0
	FLD CHLORINE FREE	.	.	.	12	12	0	15	6	0
	FLD CHLORINE (TOTAL)	.	.	.	12	12	0	17	8	0
	FLD PH	12	12	0	12	12	0	24	24	0
	FLD TEMPERATURE	12	12	0	12	12	0	24	24	0
*TOTAL SCAN CHEMISTRY (FLD)		24	24	0	60	59	0	95	68	0
CHEMISTRY (LAB)	ALKALINITY	12	12	0	12	12	0	24	24	0
	CALCIUM	12	12	0	12	12	0	24	24	0
	CYANIDE	12	0	0	12	0	0	12	0	0
	CHLORIDE	12	12	0	12	12	0	24	24	0
	COLOUR	12	12	0	12	12	0	23	23	0
	CONDUCTIVITY	12	12	0	12	12	0	24	24	0
	FLUORIDE	12	12	0	12	12	0	24	24	0

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SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
CHEMISTRY (LAB)	HARDNESS	12	12	0	12	12	0	24	24	0
	IONCAL	12	12	0	12	12	0	24	24	0
	LANGELIERS INDEX	12	12	0	12	12	0	24	24	0
	MAGNESIUM	12	12	0	12	12	0	24	24	0
	SODIUM	12	12	0	12	12	0	24	24	0
	AMMONIUM TOTAL	12	12	0	12	1	4	24	4	8
	NITRITE	12	2	9	12	0	7	24	12	11
	TOTAL NITRATES	12	1	4	12	1	3	24	8	8
	NITROGEN TOT KJELD	12	12	0	12	12	0	24	24	0
	PH	12	12	0	12	12	0	24	24	0
	PHOSPHORUS FIL REACT	12	11	1	12	2	9	.	.	.
	PHOSPHORUS TOTAL	12	7	5	12	0	11	.	.	.
	SULPHATE	12	12	0	12	12	0	24	24	0
	TURBIDITY	12	12	0	12	12	0	24	24	0
*TOTAL SCAN CHEMISTRY (LAB)		252	213	19	252	184	34	443	383	27
METALS	SILVER	12	0	1	12	0	2	24	0	11
	ALUMINUM	12	12	0	12	12	0	24	24	0
	ARSENIC	12	0	9	12	0	7	24	0	20
	BARIUM	12	12	0	12	12	0	24	24	0
	BORON	12	12	0	12	12	0	24	24	0
	BERYLLIUM	12	0	12	12	0	11	24	1	19
	CADMIUM	12	0	1	12	0	2	24	5	7

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
METALS	COBALT	12	0	4	12	0	7	24	0	15
	CHROMIUM	12	12	0	12	9	2	24	17	3
	COPPER	12	1	10	12	0	11	24	20	4
	IRON	12	12	0	12	4	8	24	24	0
	MERCURY	12	4	5	12	5	4	12	7	3
	MANGANESE	12	12	0	12	12	0	24	24	0
	MOLYBDENUM	12	12	0	12	12	0	24	17	5
	NICKEL	12	1	2	12	1	2	24	5	2
	LEAD	12	2	8	12	1	5	24	24	0
	ANTIMONY	12	11	1	12	11	1	24	18	3
	SELENIUM	12	0	7	12	0	5	24	0	15
	STRONTIUM	12	12	0	12	12	0	24	24	0
	TITANIUM	12	12	0	12	12	0	24	24	0
	THALLIUM	12	0	3	12	0	3	24	0	4
	URANIUM	12	0	8	12	0	11	24	5	15
	VANADIUM	12	0	12	12	0	11	24	0	20
	ZINC	12	7	5	12	11	1	24	24	0
*TOTAL SCAN METALS		288	134	88	288	126	93	564	311	146
*TOTAL GROUP INORGANIC & PHYSICAL		564	371	107	600	369	127	1102	762	173
CHLOROAROMATICS	HEXACHLOROBUTADIENE	11	0	0	11	0	0	11	0	0
	123 TRICHLOROBENZENE	11	0	0	11	0	0	11	0	0
	1234 T-CHLOROBENZENE	11	0	0	11	0	0	11	0	0

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SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
CHLOROARONATICS	1235 T-CHLOROBENZENE	11	0	0	11	0	0	11	0	0
	124 TRICHLOROBENZENE	11	0	0	11	0	0	11	0	0
	1245 T-CHLOROBENZENE	11	0	0	11	0	0	11	0	0
	135 TRICHLOROBENZENE	11	0	0	11	0	0	11	0	0
	HCB	11	0	0	11	0	0	11	0	0
	HEXACHLOROETHANE	11	0	0	11	0	0	11	0	0
	OCTACHLOROSTYRENE	11	0	0	11	0	0	11	0	0
	PENTACHLOROBENZENE	11	0	0	11	0	0	11	0	0
	236 TRICHLOROTOLUENE	11	0	0	11	0	0	11	0	0
	245 TRICHLOROTOLUENE	11	0	0	11	0	0	11	0	0
	26A TRICHLOROTOLUENE	11	0	0	11	0	0	11	0	0
*TOTAL SCAN CHLOROARONATICS		154	0	0	154	0	0	154	0	0
CHLOROPHENOLS	234 TRICHLOROPHENOL	2	0	0	2	0	0	.	.	.
	2345 T-CHLOROPHENOL	2	0	0	2	0	0	.	.	.
	2356 T-CHLOROPHENOL	2	0	0	2	0	0	.	.	.
	245-TRICHLOROPHENOL	2	0	0	2	0	0	.	.	.
	246-TRICHLOROPHENOL	2	0	0	2	0	0	.	.	.
	PENTACHLOROPHENOL	2	0	0	2	0	0	.	.	.
*TOTAL SCAN CHLOROPHENOLS		12	0	0	12	0	0	0	0	0
PAH	PHENANTHRENE	11	0	0	12	0	0	.	.	.

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW. TOTAL	RAW. POSITIVE	RAW. TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE
PAH	ANTHRACENE	11	0	0	12	0	0	.	.	.
	FLUORANTHENE	11	0	0	12	0	0	.	.	.
	PYRENE	11	0	0	12	0	0	.	.	.
	BENZO(A)ANTHRACENE	11	0	0	12	0	0	.	.	.
	CHRYSENE	11	0	0	12	0	0	.	.	.
	DIMETH. BENZ(A)ANTHR	6	0	0	7	0	0	.	.	.
	BENZO(E) PYRENE	11	0	0	12	0	0	.	.	.
	BENZO(B) FLUORANTHEN	11	0	0	12	0	0	.	.	.
	PERYLENE	11	0	0	12	0	0	.	.	.
	BENZO(K) FLUORANTHEN	11	0	0	12	0	0	.	.	.
	BENZO(A) PYRENE	7	0	0	8	0	0	.	.	.
	BENZO(G,H,I) PERYLEN	11	0	0	12	0	0	.	.	.
	DIBENZO(A,H) ANTHRAC	11	0	0	12	0	0	.	.	.
	INDENO(1,2,3-C,D) PY	11	0	0	12	0	0	.	.	.
	BENZO(B) CHRYSENE	11	0	0	12	0	0	.	.	.
	CORONENE	11	0	0	12	0	0	.	.	.
*TOTAL SCAN PAH		178	0	0	195	0	0	0	0	0
PESTICIDES & PCB	ALDRIN	11	0	0	11	0	0	11	0	0
	ALPHA BHC	11	0	1	11	0	0	11	0	0
	BETA BHC	11	0	0	11	0	0	11	0	0
	LINDANE	11	0	0	11	0	0	11	0	0
	ALPHA CHLORDANE	11	0	0	11	0	0	11	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PESTICIDES & PCB	GAMMA CHLORDANE	11	0	0	11	0	0	11	0	0
	DIELDRIN	11	0	0	11	0	0	11	0	0
	METHOXYCHLOR	11	0	0	11	0	0	11	0	0
	ENDOSULFAN 1	11	0	0	11	0	0	11	0	0
	ENDOSULFAN II	11	0	0	11	0	0	11	0	0
	ENDRIN	11	0	0	11	0	0	11	0	0
	ENDOSULFAN SULPHATE	11	0	0	11	0	0	11	0	0
	HEPTACHLOR EPOXIDE	11	0	0	11	0	0	11	0	0
	HEPTACHLOR	11	0	0	11	0	0	11	0	0
	MIREX	11	0	0	11	0	0	11	0	0
	OXYCHLORDANE	11	0	0	11	0	0	11	0	0
	OPDDT	11	0	0	11	0	0	11	0	0
	PCB	11	0	0	11	0	0	11	0	0
	DDD	11	0	0	11	0	0	11	0	0
	PPDDE	11	0	0	11	0	0	11	0	0
	PPDDT	11	0	0	11	0	0	11	0	0
	AMETRINE	12	0	0	12	0	0	7	0	0
	ATRAZINE	12	0	0	12	0	0	7	0	0
	ATRATONE	12	0	0	12	0	0	7	0	0
	CYANAZINE (BLADEX)	12	0	0	12	0	0	7	0	0
	D-ETHYL ATRAZINE	12	0	0	12	0	0	7	0	0
	D-ETHYL SIMAZINE	12	0	0	12	0	0	7	0	0
	PROMETONE	12	0	0	12	0	0	7	0	0
	PROPAZINE	12	0	0	12	0	0	7	0	0
	PROMETRYNE	12	0	0	12	0	0	7	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PESTICIDES & PCB	METRIBUZIN (SENCOR)	12	0	0	12	0	0	7	0	0
	SIMAZINE	12	0	0	12	0	0	7	0	0
	ALACHLOR (LASSO)	12	0	0	12	0	0	7	0	0
	METOLACHLOR	12	0	0	12	0	0	7	0	0
*TOTAL SCAN PESTICIDES & PCB		387	0	1	387	0	0	322	0	0
PHENOLICS	PHENOLICS	12	6	4	12	7	4	.	.	.
*TOTAL SCAN PHENOLICS		12	6	4	12	7	4	0	0	0
SPECIFIC PESTICIDES	TOXAPHENE	11	0	0	11	0	0	11	0	0
	2,4,5-T	2	0	0	2	0	0	.	.	.
	2,4-D	2	0	0	2	0	0	.	.	.
	2,4-DB	2	0	0	2	0	0	.	.	.
	2,4 D PROPIONIC ACID	2	0	0	2	0	0	.	.	.
	DICAMBA	2	0	0	2	0	0	.	.	.
	PICHLORAM	0	0	0	0	0	0	.	.	.
	SILVEX	2	0	0	2	0	0	.	.	.
	DIAZINON	2	0	0	2	0	0	.	.	.
	DICHLOROVOS	2	0	0	2	0	0	.	.	.
	CHLORPYRIFOS	2	0	0	2	0	0	.	.	.
	ETHION	2	0	0	2	0	0	.	.	.

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
SPECIFIC PESTICIDES	AZINPHOS-METHYL	1	0	0	1	0	0	.	.	.
	MALATHION	2	0	0	2	0	0	.	.	.
	MEVINPHOS	2	0	0	2	0	0	.	.	.
	METHYL PARATHION	2	0	0	2	0	0	.	.	.
	METHYLTRITHION	2	0	0	2	0	0	.	.	.
	PARATHION	2	0	0	2	0	0	.	.	.
	PHORATE	2	0	0	2	0	0	.	.	.
	RELDAN	2	0	0	2	0	0	.	.	.
	RONNEL	2	0	0	2	0	0	.	.	.
	AMINOCARB	0	0	0	0	0	0	.	.	.
	BENOMYL	1	0	0	1	0	0	.	.	.
	BUX	0	0	0	0	0	0	.	.	.
	CARBOFURAN	2	0	0	2	0	0	.	.	.
	CICP	2	0	0	2	0	0	.	.	.
	DIALLATE	2	0	0	2	0	0	.	.	.
	EPTAM	2	0	0	2	0	0	.	.	.
	IPC	2	0	0	2	0	0	.	.	.
	PROPOXUR	2	0	0	2	0	0	.	.	.
	CARBARYL	2	0	0	2	0	0	.	.	.
	BUTYLATE	2	0	0	2	0	0	.	.	.
*TOTAL SCAN SPECIFIC PESTICIDES		65	0	0	65	0	0	11	0	0
VOLATILES	BENZENE	12	0	0	12	0	0	11	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
VOLATILES	TOLUENE	12	0	2	12	0	2	11	0	4
	ETHYLBENZENE	12	0	3	12	0	2	11	0	2
	P-XYLENE	12	0	0	12	0	0	11	0	0
	M-XYLENE	12	0	0	12	0	0	11	0	0
	O-XYLENE	12	0	0	12	0	1	11	0	0
	STYRENE	12	0	9	12	0	1	11	0	9
	1,1 DICHLOROETHYLENE	12	0	0	12	0	0	11	0	0
	METHYLENE CHLORIDE	12	0	0	12	0	0	11	0	0
	T1,2DICHLOROETHYLENE	12	0	0	12	0	0	11	0	0
	1,1 DICHLOROETHANE	12	0	0	12	0	0	11	0	0
	CHLOROFORM	12	0	0	12	12	0	11	11	0
	111, TRICHLOROETHANE	12	0	1	12	0	1	11	0	0
	1,2 DICHLOROETHANE	12	0	0	12	0	0	11	0	0
	CARBON TETRACHLORIDE	12	0	0	12	0	0	11	0	0
	1,2 DICHLOROPROPANE	12	0	0	12	0	0	11	0	0
	TRICHLOROETHYLENE	12	0	0	12	0	0	11	0	0
	DICHLOROBROMOMETHANE	12	0	0	12	12	0	11	11	0
	112 TRICHLOROETHANE	12	0	0	12	0	0	11	0	0
	CHLORODIBROMOMETHANE	12	0	0	12	12	0	11	11	0
	T-CHLOROETHYLENE	12	0	0	12	0	2	11	0	0
	BROMOFORM	12	0	0	12	0	1	11	0	0
	1122 T-CHLOROETHANE	12	0	0	12	0	0	11	0	0
	CHLOROBENZENE	12	0	0	12	0	0	11	0	0
	1,4 DICHLOROBENZENE	12	0	0	12	0	0	11	0	0
	1,3 DICHLOROBENZENE	12	0	0	12	0	0	11	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
VOLATILES	1,2 DICHLOROBENZENE	12	0	0	12	0	0	11	0	0
	ETHLYENE DIBROMIDE	12	0	0	12	0	0	11	0	0
	TOTL TRIHALOMETHANES	12	0	0	12	12	0	11	11	0
*TOTAL SCAN VOLATILES		348	0	15	348	48	10	319	44	15
*TOTAL GROUP ORGANIC		1156	6	20	1173	55	14	806	44	15
TOTAL		1753	378	127	1809	427	141	1941	811	188

KEY TO TABLE 5 and 6

A ONTARIO DRINKING WATER OBJECTIVES (ODWO)
1. Maximum Acceptable Concentration (MAC)
1+. MAC for Total Trihalomethanes
1*. MAC for Bacteriological Analyses
Poor water quality is indicated when :
- total coliform counts > 0 < 5
- P/A Bottle Test is present after 48 hours
- Aeromonas organisms are detected in more than 25% of samples in a single submission or in successive submissions from the same sampling site
- Pseudomonas Aeruginosa, Staphylococcus Aureus and members of the Fecal Streptococcus group should not be detected in any sample
- Standard Plate Count should not exceed 500 organisms per ml at 35 ^{0}C within 48 hours
2. Interim Maximum Acceptable Concentration (IMAC)
3. Maximum Desirable Concentration (MDC)
4. Aesthetic or Recommended Operational Guideline
- hardness levels between 80 and 100 mg/L as calcium carbonate are considered to provide an acceptable balance between corrosion and incrustation, water supplies with a hardness >200 mg/L are considered poor and those in excess of 500 mg/L are unacceptable.

B HEALTH & WELFARE CANADA (H&W)
1. Maximum Acceptable Concentration (MAC)
2. Proposed MAC
3. Interim MAC
4. Aesthetic Objective (AO) (for xylenes, a total)

C WORLD HEALTH ORGANIZATION (WHO)
1. Guideline Value (GV)
2. Tentative GV
3. Aesthetic GV

D US ENVIRONMENTAL PROTECTION AGENCY (EPA)
1. Maximum Contaminant Level (MCL)
2. Suggested No-Adverse Effect Level (SNAEL)
3. Lifetime Health Advisory
4. EPA Ambient Water Quality Criteria
5. Maximum Contaminant Level Goal (MCLG)

F EUROPEAN ECONOMIC COMMUNITY (EEC)
1. Health Related Guideline Level
2. Aesthetic Guideline Level
3. Maximum Admissable Concentration (MADC)

G CALIFORNIA STATE DEPARTMENT OF HEALTH-GUIDELINE VALUE

H USSR MAXIMUM PERMISSIBLE CONCENTRATION

I NEW YORK STATE AMBIENT WATER GUIDELINE

N/A NONE AVAILABLE

INTERPRETATION OF DATA

The interpretation of analytical results that are obtained from measurements near the limit of detection of the measurement process is subject to greater uncertainty than those at higher concentrations. The principle areas of concern relate to whether the substance has actually been detected, whether it has been properly identified, and whether it is an artifact of the measurement process. In other words, false positives can be caused by the instrumentation or the test procedures used, when in fact these compounds are not present in the sample.

There are several methods to treat data from such measurements:
1. Exclude the low-level data because of this uncertainty factor. Studies of long-term environmental trends and modelling may however, be adversely affected by the exclusion of such data.
2. Qualify these data so the user is aware of the greater uncertainty associated with their use.

For the Drinking Water Surveillance Program, measurements near the limit of detection of the measurement process are reported with the code "<T". Results qualified by "W" indicate a zero measurement. These results are reported for purposes of modelling and long-term trend analysis and no significance should be attributed to a single determination of a substance below "T" (a single determination may well be a false positive). Repeat analysis or additional data are needed before it can be stated with certainty that the substance in question was truly present. On the other hand, it is less likely that repeated detection of a substance at or near the limit of detection at a specific location is solely due to an artifact in the measurement system, and more likely represents a true positive. The average of such data however, is still only an estimate of the amount of substance present subject to the possible biases of the method used.

LABORATORY RESULTS, REMARK DESCRIPTIONS

.	No Sample Taken
BDL	Below Minimum Measurable Amount
<T	Greater Than Detection Limit But Not Confident (SEE INTERPRETATION OF RESULTS ABOVE)
>	Results Are Greater Than The Upper Limit
<=>	Approximate Result
!CS	No Data: Contamination Suspected
!IL	No Data: Sample Incorrectly Labelled
!IS	No Data: Insufficient Sample
!IV	No Data: Inverted Septum
!LA	No Data: Laboratory Accident
!LD	No Data: Test Queued After Sample Discarded

!LA	No Data: Laboratory Accident
!LD	No Data: Test Queued After Sample Discarded
!NA	No Data: No Authorization To Perform Reanalysis
!NP	No Data: No Procedure
!NR	No Data: Sample Not Received
!OP	No Data: Obscured Plate
!QU	No Data: Quality Control Unacceptable
!PE	No Data: Procedural Error - Sample Discarded
!PH	No Data: Sample pH Outside Valid Range
!RE	No Data: Received Empty
!RO	No Data: See Attached Report (no numeric results)
!SM	No Data: Sample Missing
!SS	No Data: Send Separate Sample Properly Preserved
!UI	No Data: Indeterminant Interference
!TX	No Data: Time Expired
A3C	Approximate, Total Count Exceeded 300 Colonies
APL	Additional Peak, Large, Not Priority Pollutant
APS	Additional Peak, Less Than, Not Priority Pollutant
CIC	Possible Contamination, Improper Cap
CRO	Calculated Result Only
PPS	Test Performed On Preserved Sample
RMP	P and M-Xylene Not Separated
RRV	Rerun Verification
RVU	Reported Value Unusual
SPS	Several Peaks, Small, Not Priority Pollutant
UAL	Unreliable: Sample Age Exceeds Normal Limit
UCR	Unreliable: Could Not Confirm By Reanalysis
UCS	Unreliable: Contamination Suspected
UIN	Unreliable: Indeterminant Interference
XP	Positive After X Number of Hours

T# (T06) Result Taken After # Hours

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM		
	RAW	TREATED	SITE 1		
			STANDING	FREE FLOW	
BACTERIOLOGICAL					
FECAL COLIFORM MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = 0 (A1)
JAN	0 T48	.	.	.	
FEB	0 T24	.	.	.	
MAR	0 T24	.	.	.	
APR	0 T48	.	.	.	
MAY	0	.	.	.	
JUN	0	.	.	.	
JUL	0	.	.	.	
AUG	0	.	.	.	
SEP	0	.	.	.	
OCT	0	.	.	.	
DEC	0	.	.	.	
STANDRD PLATE CNT MF ( )			DET'N LIMIT = 0		GUIDELINE = 500/ML (A1)
JAN	.	1 <=>	.	2 <=>	
FEB	.	0 <=>	.	0 <=>	
MAR	.	2 <=>	.	3 <=>	
APR	.	2 <=>	.	.	
MAY	.	1 <=>	.	117	
JUN	.	1 <=>	.	10	
JUL	.	2400	.	2400	
AUG	.	230	.	2400 >	
SEP	.	52	.	57	
OCT	.	1 <=>	.	4 <=>	
NOV	.	1 <=>	.	3 <=>	
DEC	.	0 <=>	.	1 <=>	
TOTAL COLIFORM MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = 5/100ML(A1)
JAN	0 T48	0 T48	.	0 T24	
FEB	0 T24	0 T24	.	0 T24	
MAR	0 T24	0 T24	.	0 T06	
APR	0 T48	0 T48	.	.	
MAY	0	0	.	0	
JUN	0	0	.	0	
JUL	0	0	.	0	
AUG	0	0	.	0	
SEP	0	0	.	0	
OCT	0	0	.	0	
NOV	.	0	.	0	
DEC	BDL	0	.	0	
T COLIFORM BCKGRD MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = N/A
JAN	0 T48	0 T48	.	0 T24	
FEB	0 T24	0 T24	.	0 T24	
MAR	0 T24	0 T24	.	0 T06	
APR	0 T48	0 T48	.	.	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THANESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
MAY	0	0		
JUN	0	0	.	0
JUL	0	0	.	0
AUG	1	0	.	0
SEP	0	0	.	0
OCT	0	0	.	0
NOV	.	0	.	0
DEC	BDL	0	.	0

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT				DISTRIBUTION SYSTEM
	RAW	TREATED	SITE 1		
			STANDING	FREE FLOW	
CHEMISTRY (FLD)					
FLD CHLORINE (COMB) ( )			DET'N LIMIT = N/A		GUIDELINE = N/A
JAN	.	.800	.	.	
FEB	.	.400	.	.	
MAR	.	.400	.	1.700	
APR	.	.800	.	.800	
MAY	.	.600	.	.	
JUN	.	.000	.000	.600	
JUL	.	.800	.000	.000	
AUG	.	.800	.000	.000	
SEP	.	.600	.000	.000	
OCT	.	1.200	.000	.000	
NOV	.	.400	.400	.200	
DEC	.	.400	.	.200	
FLD CHLORINE FREE ( )			DET'N LIMIT = N/A		GUIDELINE = N/A
JAN	.	2.200	.	.	
FEB	.	2.600	.	.300	
MAR	.	3.400	.	.300	
APR	.	2.600	.	.	
MAY	.	3.400	.	.	
JUN	.	3.000	.000	.300	
JUL	.	2.400	.000	.000	
AUG	.	3.200	.000	.000	
SEP	.	2.800	.000	.000	
OCT	.	2.200	.000	.000	
NOV	.	3.000	.700	1.300	
DEC	.	2.800	.	1.100	
FLD CHLORINE (TOTAL) ( )			DET'N LIMIT = N/A		GUIDELINE = N/A
JAN	.	3.000	.	.	
FEB	.	3.000	.	.300	
MAR	.	3.800	.	2.000	
APR	.	3.400	.	.800	
MAY	.	4.000	.	.	
JUN	.	3.000	.000	.300	
JUL	.	3.200	.000	.000	
AUG	.	4.000	.000	.000	
SEP	.	3.400	.000	.000	
OCT	.	3.400	.000	.000	
NOV	.	3.400	1.100	1.500	
DEC	.	3.200	1.100	1.300	
FLD PH (DIMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)
JAN	7.400	7.400	7.600	7.200	
FEB	7.400	7.400	7.400	7.300	
MAR	7.400	7.400	7.000	7.200	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
APR	7.400	7.400	7.600	7.600
MAY	7.400	7.400	7.400	7.200
JUN	7.400	7.400	7.800	7.200
JUL	7.400	7.500	7.200	7.200
AUG	7.300	7.300	7.400	7.400
SEP	7.400	7.400	7.400	7.200
OCT	7.400	7.400	7.400	7.400
NOV	7.400	7.400	7.400	7.400
DEC	7.400	7.400	7.400	7.200
FLD TEMPERATURE (DEG.C)			DET'N LIMIT = N/A	GUIDELINE = 15 (A1)
JAN	11.000	11.000	9.000	7.000
FEB	11.000	11.000	7.000	5.000
MAR	11.000	11.000	5.000	5.000
APR	11.000	11.000	14.000	12.000
MAY	11.000	11.000	12.000	11.000
JUN	11.000	11.000	15.000	15.000
JUL	11.000	11.000	21.000	19.500
AUG	11.000	11.000	20.500	20.000
SEP	11.000	11.000	20.500	20.000
OCT	11.000	11.000	18.000	17.500
NOV	11.000	11.000	14.500	12.500
DEC	11.000	11.000	9.000	8.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM		
	RAW	TREATED	SITE 1		
			STANDING	FREE FLOW	
CHEMISTRY (LAB)					
ALKALINITY (MG/L)			**DET'N LIMIT = .200**		**GUIDELINE = 30-500 (A4)**
JAN	281.900	278.300	281.100	279.300	
FEB	270.300	262.900	264.100	267.300	
MAR	265.400	259.300	258.200	259.800	
APR	279.000	272.900	262.400	266.300	
MAY	264.700	259.300	255.600	259.500	
JUN	267.700	259.500	259.000	257.700	
JUL	276.200	269.600	253.700	269.800	
AUG	274.400	269.900	254.700	265.800	
SEP	266.500	261.900	249.200	257.100	
OCT	268.700	263.000	250.800	262.000	
NOV	272.300	266.200	267.400	267.600	
DEC	273.100	267.100	237.900	238.400	
CALCIUM (MG/L)			**DET'N LIMIT = .100**		**GUIDELINE = 100 (F2)**
JAN	95.400	96.800	95.000	96.400	
FEB	88.600	89.400	88.600	92.400	
MAR	92.600	92.400	91.800	90.400	
APR	103.000	101.000	92.800	99.000	
MAY	88.800	91.000	92.600	89.400	
JUN	96.000	94.800	94.200	93.800	
JUL	93.000	90.000	88.800	90.200	
AUG	98.200	99.600	103.000	98.600	
SEP	96.200	95.600	86.800	94.000	
OCT	93.600	93.800	95.200	94.200	
NOV	98.600	96.800	103.000	102.000	
DEC	99.600	98.400	83.800	83.400	
CHLORIDE (MG/L)			**DET'N LIMIT = .200**		**GUIDELINE = 250 (A3)**
JAN	13.500	17.200	17.600	17.200	
FEB	11.900	15.500	17.900	16.800	
MAR	13.000	16.400	16.900	16.100	
APR	14.900	18.200	18.000	18.200	
MAY	13.000	16.500	17.600	16.600	
JUN	13.800	17.300	17.900	16.900	
JUL	13.700	17.100	20.000	17.700	
AUG	16.600	20.200	22.700	21.000	
SEP	14.700	18.200	18.600	18.300	
OCT	14.200	18.000	36.800	19.100	
NOV	14.800	18.000	19.600	19.300	
DEC	15.200	18.600	18.600	18.300	
COLOUR (HZU)			**DET'N LIMIT = .5**		**GUIDELINE = 5.0 (A3)**
JAN	13.500	4.000	4.000	9.500	
FEB	28.000	3.000	17.500	9.500	
MAR	4.000	4.500	15.000	12.000	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
APR	15.500	2.500	19.500	8.000
MAY	26.500	5.500	11.500	13.000
JUN	12.500	2.500	13.500	5.500
JUL	20.500	3.500	13.500	20.500
AUG	28.000	4.000	ISD	59.000
SEP	10.500	4.000	35.000	4.500
OCT	10.500	2.500	6.000	5.500
NOV	20.000	3.500	7.000	3.500
DEC	11.500	2.500	7.500	5.500
CONDUCTIVITY (UMHO/CM)			DET'N LIMIT = 1	GUIDELINE = 400 (F2)
JAN	579	587	576	587
FEB	538	540	555	555
MAR	556	558	549	552
APR	609	612	570	592
MAY	548	548	538	551
JUN	562	564	498	555
JUL	568	570	540	568
AUG	599	614	594	602
SEP	578	579	541	566
OCT	573	578	561	578
NOV	596	594	621	618
DEC	599	602	547	543
FLUORIDE (MG/L)			DET'N LIMIT = .01	GUIDELINE = 2.400 (A1)
JAN	.300	.300	.340	.320
FEB	.340	.340	.360	.340
MAR	.320	.300	.340	.300
APR	.280	.260	.300	.300
MAY	.340	.320	.320	.340
JUN	.260	.260	.280	.260
JUL	.320	.320	.360	.320
AUG	.300	.300	.320	.300
SEP	.300	.300	.320	.300
OCT	.280	.260	.320	.320
NOV	.300	.300	.300	.300
DEC	.300	.300	.300	.300
HARDNESS (MG/L)			DET'N LIMIT = .500	GUIDELINE = 80-100 (A4)
JAN	295.000	300.000	294.000	298.000
FEB	274.000	277.000	278.000	286.000
MAR	284.000	283.000	282.000	279.000
APR	314.000	310.000	286.000	303.000
MAY	277.000	281.000	285.000	278.000
JUN	298.000	294.000	292.000	290.000
JUL	290.000	282.000	278.000	283.000
AUG	306.000	311.000	318.000	307.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
SEP	297.000	296.000	271.000	291.000
OCT	289.000	290.000	293.000	290.000
NOV	305.000	300.000	317.000	316.000
DEC	306.000	302.000	265.000	264.000
IONCAL (DMNSLESS)			DET'N LIMIT = N/A	GUIDELINE = N/A
JAN	.455	.623	1.742	.692
FEB	.080	2.182	.370	1.747
MAR	3.541	3.817	2.747	2.308
APR	2.360	1.288	2.919	3.191
MAY	.643	2.053	3.841	1.076
JUN	2.139	1.932	1.827	2.951
JUL	1.066	3.120	.847	3.088
AUG	2.919	1.798	3.977	3.909
SEP	2.284	1.186	1.849	2.387
OCT	.107	.534	3.221	.159
NOV	.126	.856	.572	.776
DEC	.313	.377	1.673	1.616
LANGELIERS INDEX (DMNSLESS)			DET'N LIMIT = N/A	GUIDELINE = N/A
JAN	.831	.951	1.058	.771
FEB	1.095	1.046	.993	1.226
MAR	.864	.813	.919	.935
APR	1.177	1.149	1.289	1.361
MAY	1.146	1.247	1.340	1.140
JUN	1.203	1.184	1.217	1.187
JUL	1.242	1.217	1.138	1.259
AUG	1.320	1.068	1.309	1.158
SEP	1.230	1.310	1.160	1.276
OCT	1.213	1.254	1.311	1.244
NOV	1.049	1.081	1.158	1.184
DEC	1.264	1.229	1.194	1.233
MAGNESIUM (MG/L)			DET'N LIMIT = .050	GUIDELINE = 30 (F2)
JAN	13.900	14.100	13.800	13.900
FEB	12.800	13.100	13.800	13.600
MAR	12.900	12.800	12.900	12.800
APR	14.100	14.000	13.200	13.400
MAY	13.400	13.100	13.000	13.300
JUN	14.100	14.000	13.700	13.700
JUL	14.000	13.800	13.800	14.000
AUG	14.800	15.000	15.000	14.900
SEP	13.800	13.900	13.300	13.600
OCT	13.400	13.500	13.500	13.200
NOV	14.200	14.300	14.800	15.000
DEC	13.900	13.800	13.600	13.600

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM		
	RAW	TREATED	SITE 1		
			STANDING	FREE FLOW	
SODIUM (MG/L)			DET'N LIMIT = .200		GUIDELINE = 200 (C3)
JAN	12.400	12.400	12.200	12.400	
FEB	12.500	12.400	12.600	12.400	
MAR	12.400	12.600	12.400	12.400	
APR	12.000	12.400	13.600	13.000	
MAY	12.800	12.800	13.400	12.800	
JUN	12.600	12.600	12.800	12.600	
JUL	13.200	13.400	13.200	13.200	
AUG	12.800	12.800	12.400	12.400	
SEP	14.200	14.000	13.800	13.800	
OCT	13.600	13.800	13.800	13.800	
NOV	13.200	13.200	12.800	12.800	
DEC	13.000	13.000	13.000	13.000	
AMMONIUM TOTAL (MG/L)			DET'N LIMIT = 0.002		GUIDELINE = .05 (F2)
JAN	.148	.008 <T	.006 <T	.010	
FEB	.154	.002	.002	BDL	
MAR	.164	BDL	BDL	BDL	
APR	.190	.006 <T	.002 <T	.006 <T	
MAY	.178	BDL	BDL	BDL	
JUN	.160	BDL	BDL	BDL	
JUL	.134	.004 <T	BDL	.004 <T	
AUG	.168	.002 <T	.022	.006 <T	
SEP	.158	BDL	BDL	.002 <T	
OCT	.184	BDL	BDL	BDL	
NOV	.190	BDL	.008 <T	.004 <T	
DEC	.154	BDL	.136	BDL	
NITRITE (MG/L)			DET'N LIMIT = 0.001		GUIDELINE = 1.000 (A1)
JAN	.006	.004 <T	.012	.006	
FEB	.006	.001 <T	.014	.006	
MAR	.004 <T	.001 <T	.008	.003 <T	
APR	.002 <T	BDL	.004 <T	.003 <T	
MAY	.003 <T	BDL	.024	.004 <T	
JUN	BDL	.003 <T	.019	.007	
JUL	.004 <T	.003 <T	.017	.003 <T	
AUG	.002 <T	BDL	.002 <T	.006	
SEP	.002 <T	.002 <T	.013	.003 <T	
OCT	.001 <T	BDL	.007	BDL	
NOV	.002 <T	BDL	.001 <T	.001 <T	
DEC	.003 <T	.001 <T	.004 <T	.003 <T	
TOTAL NITRATES (MG/L)			DET'N LIMIT = .020		GUIDELINE = 10.000 (A1)
JAN	BDL	BDL	BDL	.020	
FEB	.005	.005	.005	.005	
MAR	BDL	BDL	BDL	BDL	
APR	BDL	BDL	.010 <T	BDL	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
MAY	.005 <T	BDL	BDL	BDL
JUN	.005 <T	BDL	.020 <T	BDL
JUL	BDL	BDL	.015 <T	.005 <T
AUG	BDL	BDL	.050	2.320
SEP	BDL	BDL	.010 <T	BDL
OCT	.005 <T	.010 <T	.125	.010 <T
NOV	.015 <T	.010 <T	.595	.010 <T
DEC	BDL	.010 <T	.440	.005 <T
NITROGEN TOT KJELD (MG/L)			DET'N LIMIT = .020	GUIDELINE = N/A
JAN	.330	.140	.190	.130
FEB	.310	.110	.500	.140
MAR	.340	.130	.140	.100
APR	.425	.160	.100	.160
MAY	.390	.150	.450	.160
JUN	.310	.120	.580	.190
JUL	.340	.140	.220	.150
AUG	.350	.160	1.030	.190
SEP	.350	.160	.300	.160
OCT	.360	.140	.290	.150
NOV	.380	.170	.200	.180
DEC	.290	.160	.360	.110
PH (DIMNSLESS)			DET'N LIMIT = N/A	GUIDELINE = 6.5-8.5(A4)
JAN	7.870	7.990	8.100	7.810
FEB	8.180	8.140	8.090	8.300
MAR	7.940	7.900	8.010	8.030
APR	8.190	8.180	8.370	8.410
MAY	8.240	8.340	8.430	8.240
JUN	8.260	8.260	8.290	8.270
JUL	8.300	8.300	8.250	8.340
AUG	8.360	8.110	8.360	8.210
SEP	8.290	8.380	8.290	8.360
OCT	8.280	8.330	8.400	8.320
NOV	8.090	8.140	8.190	8.220
DEC	8.300	8.280	8.360	8.400
PHOSPHORUS FIL REACT (MG/L)			DET'N LIMIT = .0005	GUIDELINE = N/A
JAN	.002	.001 <T	.	.
FEB	.005	.001 <T	.	.
MAR	.011	.003	.	.
APR	.009	.002 <T	.	.
MAY	.008	.001 <T	.	.
JUN	.008	.001 <T	.	.
JUL	.002	BDL	.	.
AUG	.007	.000 <T	.	.
SEP	.006	.001 <T	.	.

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DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
OCT	.002	.001 <T	.	.
NOV	.009	.002	.	.
DEC	.001 <T	.001 <T	.	.
PHOSPHORUS TOTAL (MG/L)			DET'N LIMIT = .002	GUIDELINE = .40 (F2)
JAN	.005 <T	.004 <T	.	.
FEB	.005 <T	BDL	.	.
MAR	.011	.003 <T	.	.
APR	.009	.003 <T	.	.
MAY	.008 <T	.002 <T	.	.
JUN	.018	.003 <T	.	.
JUL	.012	.003 <T	.	.
AUG	.012	.003 <T	.	.
SEP	.009 <T	.003 <T	.	.
OCT	.006	.003 <T	.	.
NOV	.012	.005 <T	.	.
DEC	.007 <T	.004 <T	.	.
SULPHATE (MG/L)			DET'N LIMIT = .200	GUIDELINE = 500. (A3)
JAN	22.530	25.170	19.410	22.620
FEB	13.720	12.320	16.510	16.530
MAR	16.780	16.280	18.220	15.340
APR	32.710	32.570	18.040	27.240
MAY	19.510	19.330	20.880	18.820
JUN	30.410	30.430	28.170	26.220
JUL	25.790	25.550	21.750	25.300
AUG	44.590	44.120	43.940	42.100
SEP	32.490	33.510	19.680	29.050
OCT	28.780	28.430	29.240	28.820
NOV	39.570	38.830	48.720	49.980
DEC	37.540	37.060	31.800	31.600
TURBIDITY (FTU)			DET'N LIMIT = .02	GUIDELINE = 1.00 (A1)
JAN	2.300	.400	52.000 RRV	1.290
FEB	4.100	1.140	200.000 >	2.200
MAR	4.000	.300	200.000 >	3.900 RRV
APR	7.200	.500	.420	27.000
MAY	4.200	.880	200.000 >	4.100 RRV
JUN	5.600	1.070	200.000 >	14.400
JUL	3.900	.390	200.000 >	7.800 RRV
AUG	7.200	2.500	200.000 >	18.400
SEP	4.400	.870	200.000 >	5.000
OCT	6.600	.500	24.000	9.500
NOV	5.500	.480	2.200	1.080
DEC	1.600	.310	2.200 RRV	.430

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM		
	RAW	TREATED	SITE 1		
			STANDING	FREE FLOW	
METALS					
SILVER (UG/L)			DET'N LIMIT = .020		GUIDELINE = 50. (A1)
JAN	BDL	BDL	BDL	BDL	
FEB	BDL	BDL	.070 <T	BDL	
MAR	.030 <T	.060 <T	.150 <T	.070 <T	
APR	BDL	.110 <T	.050 <T	.040 <T	
MAY	BDL	BDL	.070 <T	BDL	
JUN	BDL	BDL	.120 <T	BDL	
JUL	BDL	BDL	.080 <T	BDL	
AUG	BDL	BDL	BDL	BDL	
SEP	BDL	BDL	.030 <T	BDL	
OCT	BDL	BDL	.080 <T	.030 <T	
NOV	BDL	BDL	BDL	BDL	
DEC	BDL	BDL	BDL	BDL	
ALUMINUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = 100.(A4)
JAN	8.816	6.496	7.656	5.684	
FEB	8.932	8.700	32.480	6.960	
MAR	8.816	8.584	23.200	9.048	
APR	13.920	13.920	7.888	18.560	
MAY	7.192	7.308	37.120	5.916	
JUN	15.000	15.000	50.000	15.000	
JUL	15.000	15.000	65.000	6.800	
AUG	16.000	15.000	14.000	15.000	
SEP	13.000	13.000	37.000	12.000	
OCT	6.500	5.900	17.000	6.600	
NOV	8.200	7.500	11.000	8.200	
DEC	6.500	6.100	6.700	5.900	
ARSENIC (UG/L)			DET'N LIMIT = 0.050		GUIDELINE = 50.0 (A1)
JAN	.130 <T	BDL	BDL	.080 <T	
FEB	BDL	BDL	.080 <T	BDL	
MAR	.320 <T	.490 <T	.960 <T	.410 <T	
APR	.250 <T	BDL	.550 <T	.130 <T	
MAY	.210 <T	.260 <T	.230 <T	.060 <T	
JUN	.360 <T	.250 <T	.200 <T	.140 <T	
JUL	BDL	BDL	BDL	BDL	
AUG	.340 <T	.490 <T	.470 <T	.380 <T	
SEP	.380 <T	.490 <T	.330 <T	.250 <T	
OCT	BDL	BDL	.150 <T	.060 <T	
NOV	.190 <T	.240 <T	.220 <T	.330 <T	
DEC	.150 <T	.240 <T	.250 <T	.120 <T	
BARIUM (UG/L)			DET'N LIMIT = 0.020		GUIDELINE = 1000. (A1)
JAN	220.000	170.000	170.000	170.000	
FEB	210.000	160.000	260.000	150.000	
MAR	200.000	150.000	240.000	150.000	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
METALS				
SILVER (UG/L)				DET'N LIMIT = .020 GUIDELINE = 50. (A1)
JAN	BDL	BDL	BDL	BDL
FEB	BDL	BDL	.070 <T	BDL
MAR	.030 <T	.060 <T	.150 <T	.070 <T
APR	BDL	.110 <T	.050 <T	.040 <T
MAY	BDL	BDL	.070 <T	BDL
JUN	BDL	BDL	.120 <T	BDL
JUL	BDL	BDL	.080 <T	BDL
AUG	BDL	BDL	BDL	BDL
SEP	BDL	BDL	.030 <T	BDL
OCT	BDL	BDL	.080 <T	.030 <T
NOV	BDL	BDL	BDL	BDL
DEC	BDL	BDL	BDL	BDL
ALUMINUM (UG/L)				DET'N LIMIT = .050 GUIDELINE = 100.(A4)
JAN	8.816	6.496	7.656	5.684
FEB	8.932	8.700	32.480	6.960
MAR	8.816	8.584	23.200	9.048
APR	13.920	13.920	7.888	18.560
MAY	7.192	7.308	37.120	5.916
JUN	15.000	15.000	50.000	15.000
JUL	15.000	15.000	65.000	6.800
AUG	16.000	15.000	14.000	15.000
SEP	13.000	13.000	37.000	12.000
OCT	6.500	5.900	17.000	6.600
NOV	8.200	7.500	11.000	8.200
DEC	6.500	6.100	6.700	5.900
ARSENIC (UG/L)				DET'N LIMIT = 0.050 GUIDELINE = 50.0 (A1)
JAN	.130 <T	BDL	BDL	.080 <T
FEB	BDL	BDL	.080 <T	BDL
MAR	.320 <T	.490 <T	.960 <T	.410 <T
APR	.250 <T	BDL	.550 <T	.130 <T
MAY	.210 <T	.260 <T	.230 <T	.060 <T
JUN	.360 <T	.250 <T	.200 <T	.140 <T
JUL	BDL	BDL	BDL	BDL
AUG	.340 <T	.490 <T	.470 <T	.380 <T
SEP	.380 <T	.490 <T	.330 <T	.250 <T
OCT	BDL	BDL	.150 <T	.060 <T
NOV	.190 <T	.240 <T	.220 <T	.330 <T
DEC	.150 <T	.240 <T	.250 <T	.120 <T
BARIUM (UG/L)				DET'N LIMIT = 0.020 GUIDELINE = 1000. (A1)
JAN	220.000	170.000	170.000	170.000
FEB	210.000	160.000	260.000	150.000
MAR	200.000	150.000	240.000	150.000

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DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
APR	220.000	180.000	160.000	170.000
MAY	210.000	170.000	250.000	160.000
JUN	230.000	190.000	290.000	180.000
JUL	210.000	160.000	360.000	170.000
AUG	240.000	190.000	150.000	180.000
SEP	240.000	190.000	210.000	190.000
OCT	210.000	170.000	180.000	170.000
NOV	230.000	170.000	180.000	180.000
DEC	230.000	180.000	180.000	170.000
BORON (UG/L)				DET'N LIMIT = 0.200 GUIDELINE = 5000. (A1)
JAN	290.000	100.000	96.000	90.000
FEB	230.000	200.000	190.000	100.000
MAR	270.000	270.000	220.000	170.000
APR	530.000	620.000	230.000	570.000
MAY	160.000	150.000	100.000	99.000
JUN	150.000	150.000	130.000	150.000
JUL	160.000	160.000	160.000	160.000
AUG	160.000	160.000	120.000	140.000
SEP	180.000	180.000	120.000	180.000
OCT	120.000	120.000	120.000	130.000
NOV	130.000	100.000	100.000	120.000
DEC	130.000	120.000	110.000	110.000
BERYLLIUM (UG/L)				DET'N LIMIT = 0.010 GUIDELINE = N/A
JAN	.210 <T	.050 <T	BDL	BDL
FEB	.400 <T	.440 <T	.250 <T	.030 <T
MAR	.410 <T	.400 <T	.290 <T	.260 <T
APR	.430 <T	.410 <T	.420 <T	.850
MAY	.340 <T	.210 <T	.110 <T	.020 <T
JUN	.310 <T	.270 <T	.190 <T	.250 <T
JUL	.270 <T	.210 <T	.380 <T	.160 <T
AUG	.180 <T	.250 <T	.150 <T	.060 <T
SEP	.160 <T	.200 <T	.090 <T	.210 <T
OCT	.090 <T	.120 <T	.070 <T	.120 <T
NOV	.070 <T	BDL	.050 <T	.080 <T
DEC	.060 <T	.060 <T	BDL	BDL
CADMIUM (UG/L)				DET'N LIMIT = 0.050 GUIDELINE = 5.000 (A1)
JAN	BDL	BDL	.170 <T	BDL
FEB	BDL	.170 <T	1.000	BDL
MAR	BDL	.120 <T	.430 <T	.150 <T
APR	BDL	BDL	.480 <T	BDL
MAY	BDL	BDL	1.100	BDL
JUN	BDL	BDL	.910	BDL
JUL	BDL	BDL	1.000	BDL
AUG	.070 <T	BDL	.060 <T	BDL

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DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
SEP	BDL	BDL	.590	BDL
OCT	BDL	BDL	.480 <T	BDL
NOV	BDL	BDL	.080 <T	BDL
DEC	BDL	BDL	BDL	BDL
COBALT (UG/L)			DET'N LINIT = 0.020 GUIDELINE = N/A	
JAN	.070 <T	.120 <T	.120 <T	.100 <T
FEB	.190 <T	.200 <T	.310 <T	.270 <T
MAR	BDL	.050 <T	BDL	.030 <T
APR	BDL	BDL	.280 <T	BDL
MAY	.400 <T	.400 <T	.440 <T	.370 <T
JUN	BDL	.030 <T	.090 <T	BDL
JUL	BDL	BDL	.290 <T	.160 <T
AUG	BDL	BDL	BDL	.100 <T
SEP	BDL	BDL	BDL	BDL
OCT	.130 <T	.140 <T	.190 <T	.030 <T
NOV	BDL	BDL	BDL	BDL
DEC	BDL	.060 <T	.090 <T	BDL
CHROMIUM (UG/L)			DET'N LINIT = 0.100 GUIDELINE = 50. (A1)	
JAN	13.000	.590 <T	BDL	BDL
FEB	22.000	16.000	18.000	.630 <T
MAR	19.000	19.000	16.000	8.500
APR	14.000	17.000	18.000	18.000
MAY	20.000	17.000	4.100	BDL
JUN	11.000	12.000	8.300	11.000
JUL	14.000	15.000	21.000	18.000
AUG	12.000	11.000	4.100	6.400
SEP	15.000	15.000	2.400	17.000
OCT	4.200	4.700	4.500	9.400
NOV	5.300	BDL	.620 <T	4.900
DEC	5.300	4.600 <T	2.000 <T	BDL
COPPER (UG/L)			DET'N LINIT = .100 GUIDELINE = 1000 (A3)	
JAN	1.300	.340 <T	18.000	1.100
FEB	.650 <T	.770 <T	110.000	3.100
MAR	.390 <T	.590 <T	47.000	1.600
APR	.480 <T	.600 <T	17.000	1.400
MAY	.400 <T	.580 <T	130.000	1.200
JUN	.490 <T	.530 <T	160.000	2.300
JUL	.680 <T	.600 <T	510.000	.880 <T
AUG	.510 <T	.410 <T	1.800	.850 <T
SEP	.410 <T	.390 <T	270.000	.660 <T
OCT	.330 <T	.550 <T	180.000	.500 <T
NOV	.200 <T	.280 <T	58.000	13.000
DEC	BDL	BDL	38.000	8.900

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
IRON (UG/L)				DET'N LIMIT = 4.000 GUIDELINE = 300. (A3)
JAN	1100.000	95.000	6200.000	460.000
FEB	1100.000	31.000 <T	20000.000	400.000
MAR	870.000	38.000 <T	17172.000	350.000
APR	910.000	33.000 <T	6500.000	470.000
MAY	810.000	69.000	14600.000	650.000
JUN	1000.000	38.000 <T	20000.000	360.000
JUL	960.000	34.000 <T	28000.000 RRV	1100.000
AUG	910.000	65.000	240.000	920.000
SEP	1000.000	89.000	12500.000 RRV	1200.000 RRV
OCT	970.000	46.000 <T	5000.000 RRV	1500.000
NOV	940.000	37.000 <T	310.000	59.000
DEC	970.000	36.000 <T	300.000	120.000
MERCURY (UG/L)				DET'N LIMIT = 0.010 GUIDELINE = 1.000 (A1)
JAN	.030 <T	.040 <T	.	.040 <T
FEB	.050 <T	.030 <T	.	.050 <T
MAR	BDL	BDL	.	.100
APR	BDL	BDL	.	.070
MAY	BDL	BDL	.	.100
JUN	.030 <T	.040 <T	.	.090
JUL	.050 <T	.040 <T	.	.120
AUG	.050 <T	.070	.	.110
SEP	.070	.060	.	.120
OCT	.080	.090	.	BDL
NOV	.090	.080	.	BDL
DEC	.100	.120	.	.020 <T
MANGANESE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 50.0 (A3)
JAN	150.000	31.000	110.000	10.000
FEB	160.000	11.000	92.000	17.000
MAR	140.000	17.000	57.000	11.000
APR	140.000	11.000	53.000	14.000
MAY	140.000	49.000	45.000	17.000
JUN	150.000	11.000	55.000	12.000
JUL	150.000	11.000	92.000	20.000
AUG	150.000	35.000	11.000	13.000
SEP	170.000	58.000	83.000	34.000
OCT	150.000	9.800	41.000	27.000
NOV	140.000	9.000	15.000	8.000
DEC	150.000	11.000	13.000	9.900
MOLYBDENUM (UG/L)				DET'N LIMIT = 0.020 GUIDELINE = N/A
JAN	1.000	.890	.320 <T	.900
FEB	.990	1.100	BDL	1.000
MAR	1.200	1.100	.340 <T	1.200
APR	1.300	1.100	.690	.980

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
MAY	1.100	1.000	.290 <T	.980
JUN	1.300	1.200	BDL	1.100
JUL	1.500	1.500	.080 <T	1.100
AUG	1.700	1.400	1.600	1.300
SEP	1.200	.990	.050 <T	.880
OCT	.920	.830	.540	.840
NOV	.940	.730	.750	.750
DEC	1.100	.850	.670	.590
NICKEL (UG/L)			DET'N LIMIT = 0.100 GUIDELINE = 50. (F3)	
JAN	BDL	BDL	BDL	BDL
FEB	.180 <T	BDL	BDL	BDL
MAR	BDL	BDL	BDL	BDL
APR	BDL	BDL	BDL	.530 <T
MAY	4.100	4.200	2.200	1.600 <T
JUN	.590 <T	1.000 <T	BDL	BDL
JUL	BDL	.380 <T	3.700	BDL
AUG	BDL	BDL	BDL	BDL
SEP	BDL	BDL	BDL	BDL
OCT	BDL	BDL	3.400	BDL
NOV	BDL	BDL	5.000	BDL
DEC	BDL	BDL	2.100	BDL
LEAD (UG/L)			DET'N LIMIT = 0.050 GUIDELINE = 50. (A1)	
JAN	.230	.050 <T	11.000	.720
FEB	.040 <T	BDL	63.000	1.900
MAR	.530	.060 <T	29.000	.950
APR	.030 <T	.200 <T	8.800	1.100
MAY	.080 <T	.080 <T	67.000	1.400
JUN	BDL	BDL	45.000	1.000
JUL	.070 <T	BDL	220.000	.770
AUG	.130 <T	BDL	.890	1.200
SEP	BDL	BDL	100.000 RRV	.400
OCT	.110 <T	.390	200.000 RRV	.370
NOV	.070 <T	.050 <T	16.000	3.200
DEC	.110 <T	BDL	5.100	3.900
ANTIMONY (UG/L)			DET'N LIMIT = .050 GUIDELINE = 146. (D4)	
JAN	.220	.290	.210	.260
FEB	.700	.530	BDL	.680
MAR	.700	.700	.260	.700
APR	.500	.470	.480	.480
MAY	.540	.760	.380	.670
JUN	.590	.610	BDL	.670
JUL	.530	.610	.060 <T	.500
AUG	.640	.550	.450	.660
SEP	.350	.300	BDL	.460

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
OCT	.330	.330	.590	.360
NOV	.400	.260	.520	.280
DEC	.260 <T	.280 <T	.490 <T	.240 <T
SELENIUM (UG/L)				DET'N LIMIT = 0.200 GUIDELINE = 10. (A1)
JAN	.300 <T	.470 <T	BDL	.890 <T
FEB	.480 <T	BDL	BDL	BDL
MAR	BDL	BDL	4.100 <T	2.600 <T
APR	1.600 <T	1.400 <T	.600 <T	1.300 <T
MAY	2.300 <T	7.000 <T	6.000 <T	5.200 <T
JUN	2.000 <T	1.400 <T	2.300 <T	3.200 <T
JUL	1.800 <T	3.000 <T	4.900 <T	3.700 <T
AUG	BDL	BDL	1.800 <T	BDL
SEP	BDL	BDL	BDL	1.100 <T
OCT	BDL	BDL	BDL	BDL
NOV	1.100 <T	BDL	1.400 <T	1.200 <T
DEC	BDL	BDL	BDL	BDL
STRONTIUM (UG/L)				DET'N LIMIT = .050 GUIDELINE = N/A
JAN	220.000	220.000	210.000	210.000
FEB	220.000	200.000	230.000	200.000
MAR	210.000	200.000	200.000	200.000
APR	210.000	210.000	200.000	210.000
MAY	200.000	190.000	190.000	190.000
JUN	240.000	230.000	220.000	220.000
JUL	230.000	220.000	230.000	210.000
AUG	230.000	230.000	210.000	220.000
SEP	250.000	250.000	210.000	240.000
OCT	210.000	210.000	210.000	220.000
NOV	200.000	190.000	200.000	210.000
DEC	230.000	220.000	210.000	210.000
TITANIUM (UG/L)				DET'N LIMIT = .050 GUIDELINE = N/A
JAN	13.000	11.000	12.000	12.000
FEB	13.000	12.000	14.000	12.000
MAR	17.000	16.000	15.000	14.000
APR	18.000	18.000	8.500	14.000
MAY	19.000	18.000	22.000	16.000
JUN	25.000	24.000	29.000	22.000
JUL	22.000	22.000	21.000	14.000
AUG	20.000	19.000	16.000	16.000
SEP	14.000	14.000	13.000	12.000
OCT	19.000	18.000	19.000	17.000
NOV	12.000	11.000	9.800	9.700
DEC	16.000	16.000	16.000	14.000
THALLIUM (UG/L)				DET'N LIMIT = .010 GUIDELINE = 13. (D4)

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
URANIUM (UG/L)				DET'N LIMIT = .020 GUIDELINE = 100.(B1)
JAN	BDL	BDL	BDL	BDL
FEB	.020 <T	BDL	BDL	BDL
MAR	BDL	.020 <T	BDL	.020 <T
APR	.050 <T	.020 <T	BDL	BDL
MAY	.030 <T	BDL	BDL	BDL
JUN	BDL	BDL	.020 <T	BDL
JUL	BDL	.020 <T	.060 <T	BDL
AUG	BDL	BDL	BDL	BDL
SEP	BDL	BDL	.030 <T	BDL
OCT	BDL	BDL	BDL	BDL
NOV	BDL	BDL	BDL	BDL
DEC	BDL	BDL	BDL	BDL
URANIUM (UG/L)				DET'N LIMIT = .020 GUIDELINE = 100.(B1)
JAN	BDL	.040 <T	.070 <T	.050 <T
FEB	.100 <T	.110 <T	.290	.160 <T
MAR	.070 <T	.040 <T	.220	.070 <T
APR	.050 <T	.060 <T	.210	BDL
MAY	.090 <T	.100 <T	.140 <T	.160 <T
JUN	.090 <T	.130 <T	.160 <T	.120 <T
JUL	.070 <T	.120 <T	.290	.120 <T
AUG	.130 <T	.090 <T	.260	.150 <T
SEP	BDL	.040 <T	.060 <T	BDL
OCT	.040 <T	.040 <T	.050 <T	.030 <T
NOV	BDL	.030 <T	.060 <T	BDL
DEC	BDL	BDL	.070 <T	BDL
VANADIUM (UG/L)				DET'N LIMIT = .050 GUIDELINE = N/A
JAN	.160 <T	BDL	BDL	BDL
FEB	.310 <T	.130 <T	.120 <T	.100 <T
MAR	.240 <T	.050 <T	.310 <T	.080 <T
APR	.210 <T	.110 <T	.090 <T	.110 <T
MAY	.320 <T	.230 <T	.240 <T	.110 <T
JUN	.260 <T	.100 <T	.050 <T	.090 <T
JUL	.350 <T	.220 <T	.110 <T	.110 <T
AUG	.290 <T	.180 <T	.160 <T	.170 <T
SEP	.190 <T	.100 <T	BDL	.100 <T
OCT	.150 <T	.020 <T	.180 <T	.050 <T
NOV	.190 <T	.170 <T	.170 <T	.220 <T
DEC	.180 <T	.120 <T	BDL	.060 <T
ZINC (UG/L)				DET'N LIMIT = .001 GUIDELINE = 5000. (A3)
JAN	.900 <T	1.900	390.000	22.000
FEB	1.100	2.600	1800.000	22.000
MAR	2.200	2.300	1000.000	19.000
APR	1.200	2.800	410.000	27.000
MAY	1.800	2.900	1400.000	23.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW		TREATED	SITE 1		
				STANDING		FREE FLOW
JUN	1.800		2.500	1900.000		23.000
JUL	1.500		2.800	3800.000		21.000
AUG	1.400		2.000	60.000		27.000
SEP	.510	<T	1.200	1300.000	RRV	17.000
OCT	.880	<T	1.800	380.000		6.600
NOV	.980	<T	1.400	120.000		12.000
DEC	1.500	<T	1.400	<T 87.000		9.700

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT				DISTRIBUTION SYSTEM
	RAW	TREATED	SITE 1		
			STANDING	FREE FLOW	
PESTICIDES & PCB					
ALPHA BHC (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 700 (G)
JAN	BDL	BDL	.	BDL	
FEB	BDL	BDL	.	BDL	
MAR	BDL	BDL	.	BDL	
APR	BDL	BDL	.	BDL	
MAY	BDL	BDL	.	BDL	
JUN	BDL	BDL	.	BDL	
JUL	BDL	BDL	.	BDL	
AUG	IQU	IQU	.	IQU	
SEP	BDL	BDL	.	BDL	
OCT	BDL	BDL	.	BDL	
NOV	2.000 <T	BDL	.	BDL	
DEC	BDL	BDL	.	BDL	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
PHENOLICS (UG/L)	PHENOLICS		DET'N LIMIT = 0.2	GUIDELINE = 2.00 (A3)
JAN	1.600	.800	.	.
FEB	.600 <T	.800	.	.
MAR	BDL	.600 <T	.	.
APR	.600 <T	.600 <T	.	.
MAY	1.800	2.200	.	.
JUN	.800 <T	.400 <T	.	.
JUL	2.800	1.000	.	.
AUG	10.200	1.000	.	.
SEP	1.600	2.600	.	.
OCT	1.000	1.000	.	.
NOV	BDL	.800 <T	.	.
DEC	.400 <T	BDL	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM TRANSVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
VOLATILES				
TOLUENE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 24.0 (B4)
JAN	BDL	BDL	.	BDL
FEB	.200 <T	.100 <T	.	.200 <T
MAR	BDL	BDL	.	BDL
APR	BDL	BDL	.	BDL
MAY	BDL	BDL	.	.100 <T
JUN	BDL	BDL	.	BDL
JUL	BDL	BDL	.	IU
AUG	.050 <T	BDL	.	.100 <T
SEP	BDL	BDL	.	BDL
OCT	BDL	.100 <T	.	.050 <T
NOV	BDL	BDL	.	BDL
DEC	BDL	BDL	.	BDL
ETHYLBENZENE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 2.4 (B4)
JAN	BDL	BDL	.	BDL
FEB	BDL	.050 <T	.	BDL
MAR	BDL	BDL	.	BDL
APR	.300 <T	.050 <T	.	BDL
MAY	BDL	BDL	.	.050 <T
JUN	.050 <T	BDL	.	BDL
JUL	BDL	BDL	.	IU
AUG	.050 <T	BDL	.	.050 <T
SEP	BDL	BDL	.	BDL
OCT	BDL	BDL	.	BDL
NOV	BDL	BDL	.	BDL
DEC	BDL	BDL	.	BDL
O-XYLENE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 300 (B4)
JAN	BDL	BDL	.	BDL
FEB	BDL	.050 <T	.	BDL
MAR	BDL	BDL	.	BDL
APR	BDL	BDL	.	BDL
MAY	BDL	BDL	.	BDL
JUN	BDL	BDL	.	BDL
JUL	BDL	BDL	.	IU
AUG	BDL	BDL	.	BDL
SEP	BDL	BDL	.	BDL
OCT	BDL	BDL	.	BDL
NOV	BDL	BDL	.	BDL
DEC	BDL	BDL	.	BDL
STYRENE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 46.5 (D2)
JAN	.050 <T	BDL	.	.150 <T
FEB	.250 <T	BDL	.	.050 <T
MAR	.150 <T	BDL	.	.050 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
APR	.250 <T	BDL	.	.200 <T
MAY	BDL	BDL	.	.200 <T
JUN	.100 <T	BDL	.	.100 <T
JUL	.100 <T	BDL	.	IU
AUG	.300 <T	.200 <T	.	.200 <T
SEP	BDL	BDL	.	.100 <T
OCT	BDL	BDL	.	.050 <T
NOV	.050 <T	BDL	.	BDL
DEC	.100 <T	BDL	.	BDL
CHLOROFORM (UG/L)			DET'N LIMIT = .100	GUIDELINE = 350 (A1+)
JAN	BDL	50.700	.	53.300
FEB	BDL	58.000	.	43.500
MAR	BDL	55.000	.	45.000
APR	BDL	64.500	.	45.900
MAY	BDL	73.000	.	54.400
JUN	BDL	68.600	.	45.200
JUL	BDL	92.300	.	IU
AUG	BDL	85.700	.	37.500
SEP	BDL	65.700	.	36.600
OCT	BDL	65.600	.	41.700
NOV	BDL	55.700	.	58.700
DEC	BDL	82.700	.	82.100
111, TRICHLOROETHANE (UG/L)			DET'N LIMIT = .020	GUIDELINE = 200 (D1)
JAN	BDL	BDL	.	BDL
FEB	BDL	BDL	.	BDL
MAR	BDL	BDL	.	BDL
APR	BDL	BDL	.	BDL
MAY	BDL	BDL	.	BDL
JUN	.060 <T	BDL	.	BDL
JUL	BDL	BDL	.	IU
AUG	BDL	.020 <T	.	BDL
SEP	BDL	BDL	.	BDL
OCT	BDL	BDL	.	BDL
NOV	BDL	BDL	.	BDL
DEC	BDL	BDL	.	BDL
DICHLOROBROMOMETHANE (UG/L)			DET'N LIMIT = .050	GUIDELINE = 350 (A1+)
JAN	BDL	14.300	.	13.550
FEB	BDL	14.800	.	11.800
MAR	BDL	13.450	.	10.800
APR	BDL	15.400	.	12.600
MAY	BDL	17.300	.	13.400
JUN	BDL	16.900	.	13.300
JUL	BDL	21.700	.	IU
AUG	BDL	18.900	.	11.100

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM		
	RAW	TREATED	SITE 1		
			STANDING	FREE FLOW	
SEP	BDL	16.450	.	9.600	
OCT	BDL	16.350	.	9.300	
NOV	BDL	16.900	.	17.350	
DEC	BDL	17.550	.	20.150	
CHLORODIBROMOMETHANE (UG/L)				DET'N LIMIT = .100	GUIDELINE = 350 (A1+)
JAN	BDL	2.300	.	2.600	
FEB	BDL	2.600	.	1.800	
MAR	BDL	2.000	.	1.700	
APR	BDL	3.400	.	2.700	
MAY	BDL	3.200	.	2.700	
JUN	BDL	3.500	.	2.700	
JUL	BDL	4.100	.	IU	
AUG	BDL	3.600	.	2.400	
SEP	BDL	3.200	.	2.000	
OCT	BDL	3.100	.	2.100	
NOV	BDL	3.100	.	3.100	
DEC	BDL	3.000	.	2.700	
T-CHLOROETHYLENE (UG/L)				DET'N LIMIT = .050	GUIDELINE = 10.0 (C2)
JAN	BDL	BDL	.	BDL	
FEB	BDL	BDL	.	BDL	
MAR	BDL	BDL	.	BDL	
APR	BDL	.100 <T	.	BDL	
MAY	BDL	BDL	.	BDL	
JUN	BDL	BDL	.	BDL	
JUL	BDL	.050 <T	.	IU	
AUG	BDL	BDL	.	BDL	
SEP	BDL	BDL	.	BDL	
OCT	BDL	BDL	.	BDL	
NOV	BDL	BDL	.	BDL	
DEC	BDL	BDL	.	BDL	
BROMOFORM (UG/L)				DET'N LIMIT = .200	GUIDELINE = 350 (A1+)
JAN	BDL	BDL	.	BDL	
FEB	BDL	BDL	.	BDL	
MAR	BDL	BDL	.	BDL	
APR	BDL	BDL	.	BDL	
MAY	BDL	BDL	.	BDL	
JUN	BDL	BDL	.	BDL	
JUL	BDL	.200 <T	.	IU	
AUG	BDL	BDL	.	BDL	
SEP	BDL	BDL	.	BDL	
OCT	BDL	BDL	.	BDL	
NOV	BDL	BDL	.	BDL	
DEC	BDL	BDL	.	BDL	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM THAMESVILLE WELL SUPPLY 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
TOTL TRIHALOMETHANES (UG/L)				DET'N LIMIT = .500 GUIDELINE = 350 (A1)
JAN	BDL	67.300	.	69.450
FEB	BDL	75.400	.	57.100
MAR	BDL	70.450	.	57.500
APR	BDL	83.300	.	61.200
MAY	BDL	93.500	.	70.500
JUN	BDL	89.000	.	61.200
JUL	BDL	118.300	.	IU
AUG	BDL	108.200	.	51.000
SEP	BDL	85.350	.	48.200
OCT	BDL	85.050	.	53.100
NOV	BDL	75.700	.	79.350
DEC	BDL	103.300	.	104.900

TRACE LEVELS OF TOLUENE ARE LABORATORY ARTIFACTS DERIVED FROM THE ANALYTICAL METHODOLOGY.

TRACE LEVELS OF STYRENE ARE CONSIDERED TO BE LABORATORY ARTIFACTS RESULTING FROM THE LABORATORY SHIPPING CONTAINERS.

Table 6

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
BACTERIOLOGICAL			
FECAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	0 (A1)
STANDARD PLATE COUNT MEMBRANE FILTRATION	CT/ML	0	500/ML (A1)
TOTAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	5/100mL (A1)
TOTAL COLIFORM BACKGROUND MF	CT/100ML	0	N/A
CHLOROAROMATICS			
HEXACHLOROBUTADIENE	NG/L	1.000	450. (D4)
1,2,3-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,3,4-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,3,5-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,4-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,4,5-TETRACHLOROBENZENE	NG/L	1.000	38000 (D4)
1,3,5-TRICHLOROBENZENE	NG/L	5.000	10000 (D4)
HEXACHLOROBENZENE	NG/L	1.0	10. (C1)
HEXACHLOROETHANE	NG/L	1.000	1900. (D4)
OCTACHLOROSTYRENE	NG/L	1.000	N/A
PENTACHLOROBENZENE	NG/L	1.000	74000 (D4)
2,3,6-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,4,5-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,6,A-TRICHLOROTOLUENE	NG/L	5.000	N/A
CHLOROPHENOLS			
2,3,4-TRICHLOROPHENOL	NG/L	50.	N/A
2,3,4,5-TETRACHLOROPHENOL	NG/L	50.	N/A
2,3,5,6-TETRACHLOROPHENOL	NG/L	50.	N/A
2,4,5-TRICHLOROPHENOL	NG/L	50.	2600000 (D4)
2,4,6-TRICHLOROPHENOL	NG/L	50.	2000. (B4)
PENTACHLOROPHENOL	NG/L	50.	30000. (B4)
CHEMISTRY (FLD)			
FIELD COMBINED CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD FREE CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD TOTAL CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD PH	DMSNLESS	N/A	6.5-8.5 (A4)
FIELD TEMPERATURE	°C	N/A	<15 °C (A1)
FIELD TURBIDITY	FTU	N/A	1.0 (A1)
CHEMISTRY (LAB)			
ALKALINITY	MG/L	.200	30-500 (A4)
CALCIUM	MG/L	.100	100. (F2)
CYANIDE	MG/L	.001	.20 (A1)
CHLORIDE	MG/L	.200	250. (A3)
COLOUR	TCU	.5	5.0 (A3)
CONDUCTIVITY	UMHO/CM	1.	400. (F2)
FLUORIDE	MG/L	.01	2.4 (A1)
HARDNESS	MG/L	.50	80-100 (A4)
MAGNESIUM	MG/L	.05	30. (F2)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
NITRITE	MG/L	.001	1.0 (A1)
TOTAL NITRATES	MG/L	.02	10. (A1)
NITROGEN TOTAL KJELDAHL	MG/L	.02	N/A
PH	DMSNLESS	N/A	6.5-8.5(A4)
PHOSPHORUS FIL REACT	MG/L	.0005	N/A
PHOSPHORUS TOTAL	MG/L	.002	.40(F2)
TOTAL SOLIDS	MG/L	1.	500. (A3)
TURBIDITY	FTU	.02	1.0 (A1)
METALS			
ALUMINUM	UG/L	.050	100. (A4)
ANTIMONY	UG/L	.050	10. (F3)
ARSENIC	UG/L	.050	50. (A1)
BARIUM	UG/L	.020	1000. (A1)
BORON	UG/L	.200	5000. (A1)
BERYLLIUM	UG/L	.010	0.20 (H)
CADMIUM	UG/L	.050	5.0 (A1)
COBALT	UG/L	.020	1000. (H)
CHROMIUM	UG/L	.100	50. (A1)
COPPER	UG/L	.100	1000. (A3)
IRON	UG/L	5.0	300. (A3)
MERCURY	UG/L	.01	1.0 (A1)
MANGANESE	UG/L	.050	50. (A3)
MOLYBDENUM	UG/L	.020	500. (H)
NICKEL	UG/L	.100	50. (F3)
LEAD	UG/L	.020	50. (A1)
SELENIUM	UG/L	.200	10. (A1)
SILVER	UG/L	.020	50. (A1)
STRONTIUM	UG/L	.100	2000. (H)
THALLIUM	UG/L	.010	13. (D4)
TITANIUM	UG/L	.100	N/A
URANIUM	UG/L	.020	20. (A2)
VANADIUM	UG/L	.020	100. (H)
ZINC	UG/L	.020	5000. (A3)
PHENOLICS			
PHENOLICS (UNFILTERED REACTIVE)	UG/L	.2	2.0 (A3)
PESTICIDES & PCB			
ALDRIN	NG/L	1.0	700. (A1)
AMETRINE	NG/L	50.	300000. (D3)
ATRAZINE	NG/L	50.	60000. (B3)
ALPHA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	700. (G)
BETA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	300. (G)
GAMMA HEXACHLOROCYCLOHEXANE(LINDANE)	NG/L	1.0	4000. (A1)
ALPHA CHLORDANE	NG/L	2.0	7000. (A1)
GAMMA CHLORDANE	NG/L	2.0	7000. (A1)
BLADEX	NG/L	100.	10000. (B3)
DIELDRIN	NG/L	2.0	700. (A1)
METHOXYCHLOR	NG/L	5.0	900000. (B1)
ENDOSULFAN 1 (THIODAN I)	NG/L	2.0	74000. (D4)
ENDOSULFAN 2 (THIODAN II)	NG/L	4.0	74000. (D4)
ENDRIN	NG/L	4.0	200. (A1)
ENDOSULFAN SULPHATE(THIODAN SULPHATE)	NG/L	4.0	N/A
HEPTACHLOR EPOXIDE	NG/L	1.0	3000. (A1)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
HEPTACHLOR	NG/L	1.0	3000.	(A1)
METOLACHLOR	NG/L	500.	50000.	(B3)
MIREX	NG/L	5.0	N/A	
OXYCHLORDANE	NG/L	2.0	N/A	
O,P-DDT	NG/L	5.0	30000.	(A1)
PCB	NG/L	20.0	3000.	(A2)
O,P-DDD	NG/L	5.0	N/A	
PPDDE	NG/L	1.0	30000.	(A1)
PPDDT	NG/L	5.0	30000.	(A1)
ATRATONE	NG/L	50.	N/A	
ALACHLOR	NG/L	500.	35000.	(D2)
PROMETONE	NG/L	50.	52500.	(D3)
PROPAZINE	NG/L	50.	16000.	(D2)
PROMETRYNE	NG/L	50.	1000.	(B3)
SENCOR (METRIBUZIN)	NG/L	100.	80000.	(B2)
SIMAZINE	NG/L	50.	10000.	(B3)
POLYAROMATIC HYDROCARBONS				
PHENANTHRENE	NG/L	10.0	N/A	
ANTHRACENE	NG/L	1.0	N/A	
FLUORANTHENE	NG/L	20.0	42000.	(D4)
PYRENE	NG/L	20.0	N/A	
BENZO(A)ANTHRACENE	NG/L	20.0	N/A	
CHRYSENE	NG/L	50.0	N/A	
DIMETHYL BENZO(A)ANTHRACENE	NG/L	5.0	N/A	
BENZO(E)PYRENE	NG/L	50.0	N/A	
BENZO(B)FLUORANTHENE	NG/L	10.0	N/A	
PERYLENE	NG/L	10.0	N/A	
BENZO(K)FLUORANTHENE	NG/L	1.0	N/A	
BENZO(A)PYRENE	NG/L	5.0	10.	(B1)
BENZO(G,H,I)PERYLENE	NG/L	20.0	N/A	
DIBENZO(A,H)ANTHRACENE	NG/L	10.0	N/A	
INDENO(1,2,3-C,D)PYRENE	NG/L	20.0	N/A	
BENZO(B)CHRYSENE	NG/L	2.0	N/A	
CORONENE	NG/L	10.0	N/A	
SPECIFIC PESTICIDES				
TOXAPHENE	NG/L	N/A	5000.	(A1)
2,4,5-TRICHLOROBUTYRIC ACID (2,4,5-T)	NG/L	50.	200000.	(B4)
2,4-DICHLOROBUTYRIC ACID (2,4-D)	NG/L	100.	100000.	(A1)
2,4-DICHLORORPHENOXYBUTYRIC ACID	NG/L	200.	18000.	(B3)
2,4-D PROPIONIC ACID	NG/L	100.	N/A	
DICAMBA	NG/L	100.	120000.	(B1)
PICLORAM	NG/L	100.	190000.	(B3)
SILVEX (2,4,5-TP)	NG/L	50.	10000.	(A1)
DIAZINON	NG/L	20.	20000.	(B1)
DICHLOROVOS	NG/L	20.	N/A	
DURSBAN	NG/L	20.	N/A	
ETHION	NG/L	20.	35000.	(G)
GUTHION(AZINPHOSMETHYL)	NG/L	N/A	20000.	(B1)
MALATHION	NG/L	20.	190000.	(B1)
MEVINPHOS	NG/L	20.	N/A	
METHYL PARATHION	NG/L	50.	7000.	(A1)
METHYLTRITHION	NG/L	20.	N/A	
PARATHION	NG/L	20.	50000.	(B1)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
PHORATE (THIMET)	NG/L	20.	2000. (B3)
RELDAN	NG/L	20.	N/A
RONNEL	NG/L	20.	N/A
AMINOCARB	NG/L	N/A	N/A
BENONYL	NG/L	N/A	N/A
BUX (METALKAMATE)	NG/L	2000.	N/A
CARBOFURAN	NG/L	2000.	90000. (B1)
CICP (CHLORPROPHAM)	NG/L	2000.	350000. (G)
DIALLATE	NG/L	2000.	30000. (H)
EPTAM	NG/L	2000.	N/A
IPC	NG/L	2000.	N/A
PROPOXUR (BAYGON)	NG/L	2000.	90000. (G)
SEVIN (CARBARYL)	NG/L	200.	90000. (B1)
SUTAN (BUTYLATE)	NG/L	2000.	245000. (D3)
VOLATILES			
BENZENE	UG/L	.050	5.0 (B1)
TOLUENE	UG/L	.050	24.0 (B4)
ETHYLBENZENE	UG/L	.050	2.4 (B4)
PARA-XYLENE	UG/L	.100	300. (B4)
META-XYLENE	UG/L	.100	300. (B4)
ORTHO-XYLENE	UG/L	.050	300. (B4)
1,1-DICHLOROETHYLENE	UG/L	.100	7.0 (D1)
ETHLYENE DIBROMIDE	UG/L	.05	.05 G)
METHYLENE CHLORIDE	UG/L	.500	50. (B1)
TRANS-1,2-DICHLOROETHYLENE	UG/L	.100	70. (D5)
1,1-DICHLOROETHANE	UG/L	.100	N/A
CHLOROFORM	UG/L	.100	350. (A1+)
1,1,1-TRICHLOROETHANE	UG/L	.020	200. (D1)
1,2-DICHLOROETHANE	UG/L	.050	5.0 (D1)
CARBON TETRACHLORIDE	UG/L	.200	5.0 (B1)
1,2-DICHLOROPROPANE	UG/L	.050	6.0 (D5)
TRICHLOROETHYLENE	UG/L	.100	50. (B1)
DICHLOROBROMOMETHANE	UG/L	.050	350. (A1+)
1,1,2-TRICHLOROETHANE	UG/L	.050	.60(D4)
CHLORODIBROMOMETHANE	UG/L	.100	350. (A1+)
TETRACHLOROETHYLENE	UG/L	.050	10.0 (C2)
BROMOFORM	UG/L	.200	350. (A1+)
1,1,2,2-TETRACHLOROETHANE	UG/L	.050	0.17(D4)
CHLOROBENZENE	UG/L	.100	60. (D5)
1,4-DICHLOROBENZENE	UG/L	.100	1.0 (B4)
1,3-DICHLOROBENZENE	UG/L	.100	130. (G)
1,2-DICHLOROBENZENE	UG/L	.050	3.0 (B4)
TRIFLUOROCHLOROTOLUENE	UG/L	.100	N/A
TOTAL TRIHALOMETHANES	UG/L	.500	350. (A1)
STYRENE	UG/L	.05	140. (D5)